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ABSTRACT

This action research project investigated various reading strategies to increase reading comprehension and vocabulary skills. The targeted population consisted of students from three elementary schools and one junior high school, located in lower to middle socioeconomic neighborhoods. Two elementary schools and the junior high school are located in a small Midwestern city. One elementary school is located in a large Midwestern city. Poor reading comprehension and vocabulary skills contribute to lower student achievement. Evidence for the existence of this problem includes report card grades, national achievement test scores, teacher observations, and writing samples. Analysis of probable cause indicated that factors contributing to reading scores include poor home environment, high mobility rate, low intellectual ability, inability to link new material with prior knowledge, poor reading skills, and lack of continuing education of teachers. A review of current literature and analysis of the identified problem in the targeted schools led to the use of graphic organizers to improve comprehension and vocabulary skills. Post intervention data revealed improvement in reading comprehension and vocabulary skills. (Contains 66 references and 17 tables of data; 59 appendixes contain checklists, graphic organizers, diagrams, survey instruments, and writing samples. (Author/RS)

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IMPROVING STUDENT ACHIEVEMENT THROUGH ORGANIZATION OF STUDENT LEARNING

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An Action Research Project Submitted to the Graduate Faculty of the

School of Education in Partial Fulfillment of the

Requirements for the Degree of Master of Arts in Teaching and Leadership

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Abstract

This research investigated various reading strategies to increase reading comprehension and vocabulary skills. The targeted population consisted of students from three elementary schools and one junior high school, located in lower to middle socioeconomic neighborhoods. Two elementary schools and the junior high school are located in a small Midwestern city. One elementary school is located in a large Midwestern city. Poor reading comprehension and vocabulary skills contribute to lower student achievement. Evidence for the existence of this problem includes report card grades, national achievement test scores, teacher observations, and writing samples.

Analysis of probable cause indicated that factors contributing to reading scores include poor home environment, high mobility rate, low intellectual ability, inability to link new material with prior knowledge, poor reading skills, and lack of continuing education of teachers. A review of current literature and analysis of the identified problem in the targeted schools led to the use of graphic organizers to improve comprehension and vocabulary skills. Post intervention data revealed improvement in reading comprehension and vocabulary skills.

CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

The students of the targeted elementary and seventh grade groups exhibit poor reading comprehension and vocabulary skills, which contribute to lower student achievement. Evidence for the existence of this problem includes report card grades, national achievement test scores, teacher observations, and writing samples.

Immediate Problem Context

Schools (A), (B), and (C) are located in District I, and School (D) is located in District II. The setting for the research is best described through the description of the facilities, the student populations, the academic staffs, and the programs offered at each school.

School A

Targeted school (A), an elementary school, built in 1895, is located in a residential area not far from the business district of a small Midwestern city. It was the first school built in the community, and it served as a K-12 facility for the entire area. When a separate high school was opened in 1954, it became a K-8 facility, and four classrooms and a gymnasium were added. It has served solely as an elementary K-6 facility since 1956 with no further additions or improvements. There are fourteen classrooms, two for each grade level. Music, art, and kindergarten are located in the basement. Speech and gifted classes are housed in rooms formally utilized as closets and cloakrooms. Space is not provided for science labs or computer labs as exists in newer elementary buildings in the district.

About two-thirds of the 274 elementary students currently enrolled in the school are from the neighborhood area, and the remainders are bussed in from surrounding subdivisions. This school is currently one of six elementary facilities in the community. The student population consists of 82.1 % White, 17.2 % Hispanic, 0.4 % Black, and 0.4% Native American with no Asian students. Of the above figures, 27.4% come from low income families, which is more than half of the state level of 35.7%. The school has 6.6% of its students with limited English proficiency compared to the state percentage of 6.1%. The attendance rate is 96.0% with a student mobility rate of 23.1%, compared to the state figures of 93.8% and 18.4%, respectively. Chronic truancy is only 0.8% which is two and one-half percentage points lower than the state average. Average class size is 19.8 (School Report Card, 1997a).

The academic staff at school (A) consists of one principal, 13 classroom teachers, one physical education teacher, one learning disability resource teacher, and one Title I reading teacher. The school also has the part-time services of one music teacher, one instrumental music teacher, two art teachers, one gifted teacher, one itinerant teacher for bilingual students, one speech teacher, one hearing specialist, one librarian, one psychologist, and one social worker. The support staff includes one nurse, one program assistant for the Title I program, one secretary, one library clerk, one custodian, two noon aides, and two cafeteria workers. The administrative and teaching staff is 100% White, with 90% female and 10% male. Twenty-three percent of the classroom teachers have earned Master's Degrees (School Report Card, 1997a).

Because of a recent referendum, the building will be replaced in the fall of 1999. Presently, the academic team and the students work well together, doing the best they can with the facility limitations to achieve maximum learning.

School B

School (B), which opened in 1956, is a kindergarten-sixth grade building, with a diverse student population, both ethnically and economically, and a variety of learning situations. It is located in a residential area of a small Midwestern city. There are five kindergarten classrooms, one of which is bilingual, two junior first grade classrooms. Junior first grade is a transition between kindergarten and first grade. There are five classrooms each of first through fourth grades and four classrooms each of fifth and sixth grades. Also located in the building are the following classrooms: a pre-kindergarten, two gifted, two behavior adjustment, four learning disabled, two educable mentally handicapped, one art, one music, two Title I reading rooms, two libraries, a science lab, a computer lab, gymnasium, cafeteria, kitchen, nurse's office, and main office.

The student enrollment is 1,031, 74.1% White, 22.5% Hispanic, 2.3% Black, 1.1% Asian/Pacific Islander. Students falling within the low income range, which entitles them to the free lunch program, consist of 22.7% of the enrollment which is more than half of the state level of 35.7%. Of the student population, 4.4% are listed as limited English proficient compared to the state percentage of 6.1%. The attendance rate for School (B) is 94%, with a truancy rate of

0.4%, and a mobility rate of 23.8% compared to the state figures of 93.8%, 18.4% and 2.3%, respectively. Average class size is 24.2 (School Report Card, 1997b).

The administrators of School (B) consist of a principal, who after 14 years as the assistant principal in this building moved into the position of principal four years ago, and in addition there is an assistant principal. The staff includes 37 classroom teachers, one bilingual teacher, two teachers for the educable mentally handicapped, four learning disability resource teachers, two behavior adjustment teachers, one full-time gifted teacher, three physical education teachers, one art teacher, two music teachers, one full-time librarian, three speech therapists, one full-time, two part-time, one full-time nurse, one full-time social worker, one full-time psychologist, part-time specialists, one each for vision, hearing, and occupational therapy, ten program assistants, three library aides, two full-time secretaries, two part-time secretaries, four custodians, eight cafeteria workers, and eight noon aides. Ninety-eight percent of the staff is White, and 2% is Hispanic, with 86% female and 14% male. Fifty-seven percent of the certified staff has earned a Master's Degree (School Report Card, 1997b).

School C

School (C) is a traditional junior high school for grades seven and eight. It is located in a complex consisting of a high school, a special education facility, and a new elementary school in a residential area of a small Midwestern city. The site (C) was opened in 1990. It replaces an old building located near the downtown area. The majority of students are transported to school by bus. The site (C) serves approximately 868 students. At present, classroom space is sufficient enough to allow individual teachers to work all day in the same room.

All students are enrolled in English, reading, math, science, social studies, health, keyboarding, and physical education. Band, vocal music, art, home economics, industrial arts, German, and Spanish, are also available as electives. A library, a new IBM computer lab, two gymnasiums, and a cafeteria are utilized by all students. Extracurricular offerings include athletics, jazz band, the yearbook staff, Academic Bowl, Math Counts, a bi-county spelling bee, the National Geography Bee, and Student Council.

Unlike most other subject areas at Site (C) English and reading classes utilize ability grouping. Sixty-two sections are taught by eleven language arts teachers. Students are assigned to basic, medium, and high levels, primarily on the basis of teacher recommendation. In seventh-grade, the English course includes study of vocabulary, grammar, writing, and oral communication; the reading course is primarily a study of literature with vocabulary learning and related writing activities included.

The student population of Site (C) consists of 85.8% White, 0.8% Black, 12.9% Hispanic, 0.3% Asian/P. Islander, and 0.1% Native American. Children of low-income families make up 19.1% of the population compared to 35.7% state levels, while 1.6% are limited-English proficient students. This is only about one-sixth of the state level of 6.1%. The attendance rate is 95.1%, the mobility rate is 11.8%, chronic truancy is 1.1%, compared to the state figures of 93.8%, 18.4%, and 2.3%, respectively. Average class size is 24.3 (School Report Card, 1997c)

The same principal and assistant principal have been administrators at this school for four years. The principal previously served as a classroom teacher and assistant principal in this same building. Other certified staff members include four part-time department chairmen, 51 full-time teachers (35% male and 65% female), two part-time teachers, one part-time teacher for non-English-speaking students, three learning disability resource teachers, two teachers for the educable mentally handicapped, and two behavior disorder teachers. The support staff includes two counselors, five aides, three secretaries, six custodians, seven cafeteria workers, and a part-time police officer. A speech therapist, a psychologist, and a social worker also serve this site on a part-time basis. They are based at the county special education cooperative.

The ethnic make-up of the administration and teaching staff includes 98.3% White and 1.7% Black. Seventy percent have earned their Master's Degree. The majority of administrators and teachers are in the forty to fifty-five year age range and have worked at this site for some time. There is little turnover of staff (School Report Card, 1997c).

School D

School (D) is referred to in a federal law suit as a C-8 school, which means it has been allocated monies from a tort fund to have additional personnel for the education of minority children. It is a kindergarten through sixth grade school located in the southwest quadrant of a large Midwestern city. The school was built in 1957 and contains six multi-age groupings in grades K-1-2 and six groupings in grades 3-4-5, two homogeneously grouped sixth grade classrooms, two early childhood classrooms for ages three, four, and five, and one bilingual kindergarten classroom.

Special programs at School (D) to enhance the academics include a math lab for grades second through sixth, a Higher Order Thinking Skills program in grades fourth through sixth, a High Scope Program using district curriculum, Reading Recovery, and the Guided Reading

Literacy format in the primary classrooms. Other special programs at School (D) to improve discipline include a Peer Mediation Program and the Circle Program which teach responsible behavior and making responsible choices. There is a Flexible Service Delivery System designed to identify and analyze the needs of special education students. This is a building team that addresses problems and selects appropriate interventions.

The enrollment of 391 students consists of 57.7% White, 34.8% Black, 6.7% Hispanic, 0.5% Asian/Pacific Islander, and 0.3% Native American. Of the total enrollment, 51.5% of School (D) students qualify as low income which is one and one-half times greater than the state average of 35.7%. School (D) has 1.3% of its students receiving bilingual education because of limited English profiency compared to the state level of 6.1%. The attendance rate for School (D) is 93.5% which matches the state level, a mobility rate of 24.6% which is almost one and one-half times greater than the state level of 18.4%, and a truancy rate of 4.4% compared to a state level of 2.3%. The average class size is 24.1. The majority of the students are bussed (School Report Card, 1997d).

The staff at School (D) consists of one principal, a curriculum implementor, 17 classroom teachers, two learning disability resource teachers, one part-time learning disability resource teacher, one part-time speech clinician, two Title I Teachers, one Reading Recovery teacher, specialists in art, music, and physical education, seven paraprofessionals, one building engineer, one night custodian, one secretary, one student support specialist, one parent liaison, a nurse, a school psychologist, a social worker, a home school counselor, and several playground and lunch aides. The racial/ethnic background of the administration and teaching staff at School (D) is 86%

White, 10% Black, and 3% Hispanic. The staff is 86% female and 14% male. Sixty-one percent have earned their Master's Degree (School Report Card, 1997d).

District Demographics

School District I

School District I, of which schools A, B, and C are a part, is a community unit district. The district encompasses approximately 160 square miles. The county in which the district is located is the second fastest growing county in the state, with a student enrollment increase of 3% on the average over the past five years (Community Based Learning Plan, 1997).

The student population is drawn from the larger community, two smaller rural communities, and the surrounding county area. As of October of 1997, there were approximately 5,650 students enrolled in the district (Community Based Learning Plan, 1997). The district is composed of six elementary schools, one junior high, one high school, and a special education facility. Students in the elementary schools are heterogeniously grouped. The district pupil-teacher ratio at the elementary level is 20.5 to 1, with the pupil-administrator ratio being 374.7 to 1. The ethnic background and total enrollment of the student population is presented in Table 1 on the following page (School Report Card 1997a,b,c).

Table 1

Racial/Ethnic Background and Total Enrollment of District I Compared to State Percentages

	White	Black	Hispanic	Asian/P. Islander	Native American	Total Enrolled
School (A)	82.1%	0.4%	17.2%	0.0%	0.4%	274
School (B)	74.1%	2.3%	22.5%	1.1%	0.0%	1,031
School (C)	85.8%	0.8%	12.9%	0.3%	0.1%	930
District	84.7%	1.2%	13.5%	0.6%	0.1%	5,621
State	63.3%	20.6%	12.8%	3.1%	0.1%	1,931,871

A comparison of low-income and limited-English students in the three schools is presented in Table 2 (School Report Card 1997a, b, c).

Table 2

Low-Income and Limited-English-Proficient Students of District I

	Low-Income	Limited-English-Proficient
School (A)	27.4%	6.6%
School (B)	22.7%	4.4%
School (C)	19.1%	1.6%
District	17.8%	2.2%
State	35.7%	6.1%

Table 3 shows that District I attendance, student mobility, and chronic truancy are very close to the state percentages. The expenditure per pupil is $4,236.00 (School Report Card 1997a, b, c).

Table 3

Attendance, Mobility and Chronic Truancy in District I Compared to the State Percentages

	Attendance	Student Mobility	Chronic Truancy
School (A)	96.0%	23.1%	0.8%
School (B)	94.0%	23.8%	0.4%
School (C)	95.1%	11.8%	1.1%
District	94.4%	17.6%	2.1%
State	93.8%	18.4%	2.3%

School District I administrators include a superintendent, two assistant superintendents, a director of special education, nine principals and five assistant principals. In addition to the administrative staff, there are 281 teachers in the district, 84% of whom are White, 7% Hispanic, 7% Black, 73.8% female, 26.7% male. The percentage of those with a Master's Degree or more is 48.9%. There is a seven-member school board. The present school board and administrators are very supportive of the staff in general. The district's mission statement for its educational program focuses on the welfare and maximum development of each child, where all students have an opportunity to learn (Parent Handbook, 1997-1998).

School District II

School District II which includes School (D) is a unit district covering 170 square miles. The total population as of September 1996 was 26,999 students all of whom live within the larger metropolitan area. The number of schools within District II includes four high schools, four middle schools, 40 elementary schools of which nine are magnet schools, two special education facilities, and one early education center. A Controlled Choice Plan was developed to accomplish desegregation of the schools. District II pupil-teacher ratio at the elementary level is 19.2 to 1 with the pupil-administrator ratio being 257.2 to 1. The racial/ethnic background of students in the district compared to the state percentages is presented in Table 4 (School Report Card, 1997d).

Table 4

Racial/Ethnic Background and Total Enrollment of District II Compared to State Percentages

	White	**Black**	**Hispanic**	**Asian/P. Islander**	**Native American**	**Total Enrolled**
School (D)	57.7%	34.8%	6.7%	0.5%	0.3%	391
District	60.5%	27.2%	9.1%	3.0%	0.2%	26,999
State	63.3%	20.6%	12.8%	3.1%	0.1%	1,931,871

A comparison of low-income and limited-English students in District II is presented in Table 5 (School Report Card, 1997d).

Table 5

Low-Income and Limited-English-Proficient Students of District II

	Low-Income	**Limited-English-Proficient**
School (D)	51.5%	1.3%
District	37.4%	4.9%
State	35.7%	6.1%

Table 6 shows the attendance, student mobility, and chronic truancy for District I. As of 1995/96 the district's operating expenditure per pupil was $7,268 (School Report Card, 1997d).

Table 6

Attendance, Mobility and Chronic Truancy in District II Compared to the State Percentages

	Attendance	**Student Mobility**	**Chronic Truancy**
School (D)	93.5%	24.6%	4.4%
District	91.6%	19.9%	9.4%
State	93.8%	18.4%	2.3%

The administrative structure of School District II consists of one superintendent, one associate superintendent of equity and education, one associate superintendent of management services, one director of desegregation, one assistant superintendent for human resources, the office of the attorney, and one director of communications. In addition to the administrative staff, there are 1,696 teachers in the district, 90% of whom are White, 2.9% Hispanic, 5.7% Black, 1.1% Asian/Pacific Islander, 0.3% Native American, 73.7% female, 26.3% male. The percentage of those with a Master's Degree or more is 70.0%. The school board in School District II is composed of seven members elected from designated, geographically determined districts (School Report Card, 1997d).

The Surrounding Community

Community I in which schools (A), (B), and (C) are located is situated approximately 70 miles west of a large Midwestern city, along a major interstate. It is an area that traditionally has been very conservative, politically and educationally. In the past ten years, however, there has been growth due to an influx from two major metropolitan areas. This growth has resulted in changes, both negative and positive. Of the positive, a main point would be the passage of four school-related referenda in the past ten years. The city, which encompasses 8.2 square miles, has a population of 17,722, the majority of which is White, with a Hispanic minority, according to a special census conducted by the Chamber of Commerce in 1995 (Growth Dimensions, 1996). The median age of the population is 31.9. The median home value is $58,400. The median household income for the community is $29,503.00 (Growth Dimensions, 1996).

The education level for the community is distributed along a spectrum ranging from 29.1% with less than a high school diploma, to 41.1% with a high school diploma, 22.1% with some college, and 7.7% with a college degree. The average unemployment rate stands at 4.7% (Growth Dimensions, 1996). Employment for the area includes manufacturing, retail trade, and service jobs (Growth Dimensions, 1996).

The county in which the community is located includes 283 square miles, with a population of 35,620, according to the 1995 census (Growth Dimensions, 1996). It is the second-fastest growing county in the state (Community Based Learning Plan, 1997). Students for the district are drawn from the larger community and the surrounding county area.

Community II in which School (D) is located is situated 85 miles northwest of a large metropolitan area in the Midwest. The city, which encompasses 45 square miles, has a 1996 estimated population of 347,547 (City Quick Reference Guide, 1997). The 1990 gender population was 48.5% male and 51.5% female with a median age of 33.6 years. The 1990 race/ethnicity of the community was 90.0% White, 7.1% Black, 0.2% Native American, Eskimo, Aleut, 1.0% Asian/Pacific Islander, 1.7% other race, and 3.4% Hispanic origin (City Quick Reference Guide, 1997). As of 1995, the median purchase price of an existing family home is

$87,100.00. The median household income for the community is $31,768, with 12.9% falling below $10,000, and 2.9% more than $100,000 (City Quick Reference Guide, 1997).

The educational attainment of persons 25 years and older is distributed along a spectrum ranging from 8.3% with less than 9th grade, 15.3% with education between 9th-12th grades with no diploma, 26.1% with high school diplomas, 28.7% with some college, 6.0% with an associate degree, 10.7% with a bachelor's degree, and 4.9% with a graduate or professional degree.

Major employers for the community are industrial plants, farm implements' manufacturers, furniture companies, seed companies, health care systems, an aircraft component's corporation, the local government and the school district. It is one of the largest producers of machine tools in the world. The county in which the city is located includes 1,330.85 square kilometers with a population of 264,873 (City Quick Reference Guide, 1997). The community is the site for a college, junior college, schools of business, engineering, and medicine. It also has natural history museums, a symphony orchestra, a concert band, and art galleries.

National Context of the Problem

Schools have become places where many students fail rather than succeed. "Forty-two percent of fourth-graders, according to 1994 results of the National Assessment of Education Progress (NAEP), aren't even reading at grade level." (Carbo, 1997, p. 33). Factors which contribute to this problem include: home environment, inability to link new material and prior knowledge, poor reading skills, and the lack of continuing education on the part of some teachers. Low-achieving students must begin to break "the cycle of failure and frustration" (Graves, Graves, & Braaten, 1996, p. 14) if they are to succeed someday in their future vocations. The future of our nation is at stake. It "...desperately needs a highly literate population for a much more demanding and internationally competitive workplace" (Carbo, 1996, p. 8).

Motivation of academically at-risk students has become a major challenge for educators. "Given 30 to 35 different learning styles, abilities, interests, attention spans and more, the task seems impossible" (Bellanca, 1990, p. v). Traditional teacher-directed instruction often proves unsuccessful with the bottom third (or more) of the student population. Educators are paying increasingly more attention to the need to address different ways of learning. "During the last ten years Howard Gardner has provided compelling arguments against the current single-trait theory of intelligence that slots so many children into failure." (Harris, 1992, p. 9).

Much is currently being written on the subject of learning styles. B. L. Skipper (1997) writes of the importance of adapting reading methods to individual learning styles:

> Using this approach, children are diagnosed as auditory, visual, tactile, or kinesthetic learners. Auditory learners respond best to what they hear; visual learners respond best to what they see; tactile learners perform best in situations that involve the sense of touch; and kinesthetic learners become most engaged when they move. (pp. 36-37)

Designing different combinations of activities for different students recognizes this existence of varied learning styles (Graves et al., 1996).

Traditionally, low-achieving students have received predominately skill-and-drill instruction. Higher order thinking strategies have been directed more often at the instruction of the more intellectually capable students. Those who are "...low-achieving students have in effect been taught to behave according to a stereotype" (Jones & Pierce, 1992, p. 70). Evidence shows that students lose "much of their earlier enthusiasm, motivation, and positive expectations" (Slavin, 1996, p. 5) when they fail to learn. Intervention programs have often been implemented too late or not at all.

"No one intervention or viewpoint can address the complex nature of school failure or success, or, for that matter, of social inequalities and inequities." (Harris & Graham, 1996, p. 29). Education of a nation's citizens is critical. Its citizens can become active, engaged learners, but they learn in different styles and by means of different strategies. Fielding and Pearson contend that "...comprehension can in fact be taught" (Fielding & Pearson, 1994, p. 65) if varied and appropriate strategies are successfully matched to students. The future success of this country will be greatly impacted by the extent to which its educators deal with this critical issue.

CHAPTER 2

PROBLEM DOCUMENTATION

Problem Evidence

Poor reading comprehension and poor vocabulary skills contribute to lower student achievement. In order to document the existence of the problem, a parent reading survey and a student reading survey (Appendices A & B) were distributed the first month of school by each teacher/researcher to each of their respective parents and students. The parent survey questioned how they felt about their students' interest in reading, their ability to understand what is read, their ability to figure out words not known, and the amount of television watched. Possible answers on the survey were 1 = never, 2 = not very often, 3 = sometimes, 4 = often, and n = the number of parents. Tables 7 shows the results of these surveys.

Table 7

Parent Survey Results for All Sites

	School A n=16				School B n=21				School C n=16				School D n=5			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
I like to read books	1	2	8	5	0	1	11	9	0	4	7	5	0	1	2	2
I see adults reading in my home	0	0	5	11	0	2	8	11	0	3	7	6	0	0	1	4
Reading is easy	0	4	8	4	0	9	9	3	0	3	7	6	1	3	1	0
I can figure out words I don't know	0	0	7	9	0	1	12	8	0	0	10	6	0	1	4	0
I like to be read to	0	9	5	2	0	7	9	5	4	10	2	0	0	2	2	1

Table 7 contd.

Parent Survey Results for All Sites (contd.)

	School A n=16				School B n=21				School C n=16				School D n=5			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
I think I'm a very good reader	0	3	9	4	0	7	8	6	0	5	6	5	0	4	1	0
Libraries are a neat place	0	4	6	6	0	1	8	12	0	8	4	4	0	0	4	1
I understand when I read alone	0	0	3	13	0	0	9	12	0	1	6	9	0	1	4	0
I hardly ever watch TV	4	4	8	0	1	9	11	0	0	6	9	0	2	1	2	0
I think reading is great	2	9	4	1	0	7	4	10	0	9	5	2	0	2	2	1

The student reading survey asked the same questions as the parent survey. Possible answers on the survey were 1 = never, 2 = not very often, 3 = sometimes, and 4 = often. In the survey, n = the number of students at each school.

Table 8

Student Survey Results for All Sites

	School A n=26				School B n=21				School C n=18				School D n=5			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
I like to read books	2	5	14	5	1	3	5	12	1	4	7	6	1	0	3	1
I see adults reading in my home	1	4	9	12	1	1	14	5	2	6	4	6	1	1	2	1
Reading is easy	0	10	5	11	2	4	6	9	0	2	7	9	2	2	0	1
I can figure out words I don't know	1	0	13	12	0	2	7	12	0	0	4	14	2	2	1	0
I like to be read to	0	8	9	9	0	3	5	13	0	8	5	5	0	2	1	2
I think I am a very good reader	2	9	7	8	1	6	4	10	0	4	10	4	2	1	2	0
Libraries are a neat place	1	8	7	10	1	3	5	12	2	6	4	6	0	0	2	3
I understand when I read alone	0	2	5	19	1	3	6	11	0	0	8	10	3	1	1	0
I hardly ever watch TV	18	6	2	0	6	4	3	8	7	6	5	0	3	0	2	0
I think reading is great	2	10	7	7	1	2	1	17	1	5	9	3	2	2	0	1

In addition, each teacher/researcher reviewed the cumulative folder reading grades from the previous year and the results of the reading subtests from the fall of 1997 Stanford Achievement

Tests (if available) in order to determine the reading levels of the students surveyed. Informal teacher observation checklists to determine which students had mastered the reading skills of comparison/contrast, sequence, part/whole relationships, classification, and analogies were completed for each school (Appendices C-F). These checklists included,pretests in the mentioned skill areas and a writing sample.

School A

According to parents, 81% said their students liked to read, 75% found it fairly easy, 81% were good readers, and 76% liked going to the library. In the student survey, 73% stated they liked to read, 61% found it easy, 58% felt they were good readers, 65% liked going to the library, and 54% felt reading was a good way to spend time. Both groups agreed that the students could usually figure out words they didn't know and understood what they read. Eighty-one percent of the students said they saw parents reading at home, while 100% of the parents stated that they were seen reading sometimes or often at home. Both groups agreed students watched a lot of television. Seventy percent of the students liked to be read to by an adult sometimes or often, while only 46% of the parents thought their student liked being read to at home.

Reading grades of the previous year from the student cumulative folders showed that 38% received a grade of A, 29% of B, and 33% earned a C for a total reading grade. After reviewing reading standard scores from the Stanford Achievement Tests, the teacher/researcher noted that the class ranged from the 6th percentile to the 99th percentile in total reading. Twenty-nine percent of the class fell between the 6th and 42nd percentile, 51% of the class scored between the 50th and the 79th percentile, while 19% scored above the 80th percentile. When these scores were compared to the grade equivalents obtained from the Standardized Test for Assessment of Reading (S.T.A.R.) pretest (Advantage Learning Systems, Inc., 1996), 29% were found to be reading between 2.8 and 4.9 grade level, 43% read between 5.2 and 5.6 grade level, and 28% read between 6.1 and 11.6 grade level. The class data collected to obtain an overview of the class are presented in Table 9. Reading comprehension, reading vocabulary, and total reading scores were recorded from the 1998 Stanford tests given in the fall. The reading grades are the yearly average in reading for fourth grade indicated on their cumulative folders. The computer S.T.A.R.'s pretest was taken at the beginning of the year.

Table 9

Beginning Class Data - School A

Student	Rdg Compr	Rdg Voc	Total Rdg	Rdg Grade	STARS Pretest
A	65	82	73	B	7.1
B	77	87	81	A	6.1
C	18	32	20	C	4
D	7	38	13	B	4.7
E	58	65	63	B	6.8
F	85	92	89	A	7.5
G	77	51	70	B	5.6
H	58	82	68	B	4.9
I	97	97	99	A	11.6
J	81	85	84	A	4.7
K	73	75	76	C	5.6
L	55	51	54	C	5.2
M	47	75	57	A	5.3
N	73	51	68	C	5.3
O	86	90	89	A	6.9
P	97	82	96	A	6.6
Q	45	43	43	C	5.5
R	2	43	8	B	5.6
S	58	65	63	A	6.1
T	13	17	12	C	3.3

An informal observation checklist showed which students had mastered the reading comprehension skills of comparison/contrast, sequence, part/whole relationships, classification, and analogies (Appendix C). Mastery of a skill was determined to be a score of 80% or better. The teacher/researcher found that three-fourths of the class had mastered part/whole relationships and classification. Only half the class could sequence events in a story, while less than one-third could compare and contrast ideas or make analogies. The writing samples further demonstrated difficulty with sequencing the events of a story. There is a need for more organization and higher order thinking skills if these students are to continue their progress in reading at higher levels.

Parents, students, and the teacher/researcher saw the students as fairly good readers. The teacher/researcher found there were many more components to the reading process that may benefit the students' understanding through use of graphic organizers and higher order thinking skills.

School B

The same parent survey and student survey (Appendices A & B) as given at School A were also administered at School B. The results of the surveys given to both children and parents at School B presented interesting similarities in several areas and discrepancies in others. Both indicated that at least 80% of the students liked to read and enjoyed going to the library. Each set of surveys indicated that approximately 90% of the students saw adults reading in their homes with some degree of frequency. The enjoyment of listening to books being read seemed to be higher at school, with 86% of the students responding favorably, while only 67% of the parents perceived enjoyment on the part of their children being read to at home. Both surveys indicated that the students were able to decode unfamiliar words, though the students had more confidence in themselves than the parents did.

The biggest discrepancies were found in the areas of television viewing, self perception and comprehension skills. With regard to the number of hours spent watching television, nearly 30% of the children saw themselves watching more than four hours a day, while only 5% of the parents indicated that much television was watched. Approximately 20% of the children indicated watching three to four hours daily, in contrast, to about 40% on the parent survey. The children stated only 14% of their viewing hours were one to two hours, while 52% of the parents marked one to two hours. Thirty-eight percent of the children felt they watched less than one hour per day, while none of the parents felt that was true.

Another area that varied was that of self perception with regard to reading. Forty-seven percent of the children saw themselves as good readers, compared to 29% of parents who felt their children were good readers. Approximately 70% of the parents saw their children in a more average to low average range, as compared to 48% of children who placed themselves in the same category. No parents saw their child as a poor reader, while 5% of the children did. Likewise, 42% of the children indicated that reading was easy, in contrast to 14% of parents who felt reading was easy for their child. Nearly 20% of the children envisioned reading as somewhat difficult, while 43% of the parents felt their children perceived reading to be difficult.

One more area of discrepancy was that of comprehension. Parents believed that most of the time children understood what was read. The children, however, indicated that about 20% of them had difficulty understanding what was read. Also of interest was the question concerning reading as a leisure time activity. Eighty percent of the children felt it was a great way to spend time, compared to only 48% on the parent survey.

The students at School B were second graders, and as such, there were no standardized scores available from first grade. The researcher did, however, make note of the children's scores from the end of unit reading tests. There were seven tests given over the course of first grade as each book was completed; 80% was the score needed to pass. The sub scores ranged from 43% to 100%. The areas of concern were sequence, part/whole relationships, and context clues. The average of these seven score is noted on Table 10. The averages seem to be high, but when the teacher/researcher examined the unit tests, the level of difficulty appeared low. In addition, the Gates-MacGinitie Reading Test (Gates-MacGinitie Reading Tests, 1989) was administered by the teacher/researcher in mid-October of 1998. The scores, which combined vocabulary and comprehension, were recorded in grade equivalencies. The range there was from 1.3 grade level to 6.3 grade level. Approximately half of the children scored below the beginning second grade level. Comprehension was significantly lower than word recognition. Table 10 shows the data collected at the beginning of the year to obtain an overall picture of these second grade students.

Table 10

Beginning Class Data - School B

Student	Gates Vocabulary	Gates Compr	Gates Total Rdg	Unit Rdg Average
A	2.8	1.7	2.3	97
B	2.1	1.6	1.7	86
C	3.1	2.3	2.5	73
D	2.3	1.7	2	86
E	5.3	7.6	6.3	NA
F	2.2	1.5	1.7	85

Table 10 contd.

Beginning Class Data - School B contd.

Student	Gates Vocabulary	Gates Compr	Gates Total Rdg	Unit Rdg Average
G	2.4	3	2.5	89
H	1.7	1.5	1.6	80
I	2	2.4	2.3	NA
J	1.5	1.1	1.3	75
K	1.9	1.7	1.8	87
L	1.5	1.6	1.6	89
M	2	1.9	2	80
N	6.2	4.5	5.6	97
O	3.1	3.6	3.3	97
P	1.4	1.6	1.5	82
Q	1.6	1.5	1.6	80

An informal observation checklist (Appendix D) was developed to ascertain which skills had been mastered by the second grade children in the study group of School B. The skills included on the checklist were those of comparison/contrast, sequence, and part/whole relationships. A writing sample was also taken. Initially classification was included in the checklist. It was established, however, by the first sample taken that the second grade children had mastered classification. Analogy, which was included at Schools A and C, was not used in the checklist of School B, as it is a skill introduced late in the year. The teacher/researcher discovered the children needed help with comparison/contrast, sequence, and part/whole relationships. It is clear that the areas would benefit from more organizational skills.

School C

The teacher/researcher at School C also gave the same parent survey and student survey (Appendices A & B) as were given at Schools A and B. The parents of School C students appeared to hold a less positive view of their children's reading ability than do their children. Sixty-nine percent of the parents indicated that they considered their children good or very good readers, as opposed to 78% in the children's opinion. None of the children or parents checked the poor reader category. Eighty-one percent of the parents believed that reading was easy or very easy for their children versus 89% in the children's opinion.

A significant difference in opinion was shown in the category of understanding words read. Thirty-eight percent of the parents, as opposed to 78% of the students, said that their children almost always figured out the meanings of unfamiliar words. Over all, the students in this group tended to have a higher opinion of their reading ability than their parents did. Estimation of television viewing time was also mixed. Thirty-nine percent of the students, but only 6% of the parents, estimated the children's viewing time to be more than four hours per day. No student or parent checked the category of viewing hardly any television programs at all.

Final sixth-grade reading and English grades for the seventh-grade (middle level) students in the School C group ranged from A's to C's. Ten percent earned A's in both subjects, 35% B's in both, and 25% C's in both. Fifteen percent earned a C in English and a B in reading. One student earned an A in English and a B in reading, and another an A in English and a C in reading.

National percentile scores, as determined by the Stanford Achievement Test, were also taken into consideration. Fifteen percent scored in the average (40th to 60% percentile) range for reading. Twenty-five percent were below the average (below 39th percentile) range and 45% were above average (above 60th percentile). National percentile scores in language showed 5% in the average range, 30% below, and 40% above. This data collected at the beginning of the year including the

Stanford results and 6th grade reading and language averages are summarized in Table 11. The table shows reading vocabulary, total reading, and language national percentile scores as earned on the students' sixth grade Stanford Achievement tests. Also displayed are the students' final sixth grade reading and language grades. Table 11 follows.

Table 11

Beginning Class Data - School C

Student	Rdg Voc	Total Rdg	Total Lang	Rdg Grade	Lang Grade
A	31	35	24	C	C
B	59	60	64	C	C
C	43	64	71	B	B
D	18	69	19	B	B
E	68	71	60	B	B
F	65	86	41	B	C
G	NA	NA	NA	A	A
H	57	30	39	B	A
I	50	36	63	B	B
J	73	74	71	A	A
K	36	49	13	B	B
L	NA	NA	NA	B	C
M	36	46	67	C	C
N	NA	NA	NA	NA	NA
O	NA	NA	NA	C	C
P	76	82	64	B	B
Q	89	74	61	B	B
R	76	61	25	C	C
S	59	33	38	C	C
T	73	73	74	B	B

An informal teacher observation checklist (Appendix E) was designed to show mastery level (at three different points during the action research period) of five reading strategies: comparison/contrast, sequence, part/whole relationships, classification, and analogy. Eighty percent was considered mastery. The initial observation revealed 70% of the students mastering comparison/contrast, 80% sequence, 20% part/whole relationships, 30% classification, and 55% analogy.

Final sixth-grade reading and language grades, standardized test scores, and initial assessment of reading strategies mastery all supported the positive view that the students, and their parents, to a somewhat lesser degree, expressed when surveyed. No student in the targeted group of twenty earned a final sixth-grade reading or language grade below a C. Forty-five percent scored above the national average in reading and 40% in language. In the initial attempt of two reading strategies, 70% and 80% showed mastery. All of these factors demonstrated this School C group to be hardworking and disciplined. Need for improved skills seems to be more apparent in the areas of part/whole relationships, classification and analogies.

School D

At School D, five parents were surveyed and their children were surveyed orally. The same parent and student surveys (Appendices A & B) as given at Schools A, B, and C were used. The results indicated that the children liked to read, but 4 out of 5 found reading difficult. Both parents and students indicated students couldn't figure out the words and couldn't understand what they read. More than half of the parents and students felt the students were good readers, enjoyed being read to, and saw parents reading at home. Surprisingly, more than half of the parents and students reported the students did not watch a lot of television.

The group of five children observed in this portion of the study was unique. The children were part of the Reading Recovery program (Clay, 1993) which targets the lowest 20% of all first grade students in School D. Students who were included in the Reading Recovery program had been previously identified by their kindergarten teachers who administered a needs assessment test. The assessments consisted of a writing spree, a sound assessment survey, a letter identification task, and a text reading level. It identified those students who were not ready for the first grade basal reading instruction.

The teacher/researcher administered six subtests to each of these identified students early in the school year. The six subtests consisted of identifying 54 possible upper and lowercase letters, an Ohio Word Test (Clay, 1993) which uses 20 high frequency words from the Dolch Word List, and a concepts-about-print task which consists of 24 items and shows what children have learned about the way language is printed, a ten minute writing vocabulary task written within a time allotted of ten minutes, a dictation task of hearing and recording of 37 possible sounds in words, and running records of reading texts. A running record is a sampling of the students' reading behavior while reading texts. A sample reading of 100 words from each text is required. At the earliest reading level when the child is reading simple texts, the number of words may be well below 100 words. Checkmarks are used for each word read correctly and every error is recorded. These running records help the educators understand how students are trying to process what they read.

The numbers of correct responses for each student on the six sub-tests are presented in Table 12 below. Book level = Reading Recovery text level, Ltr Ident = letter identification test, Word Test = Ohio word test based on Dolch words, Concepts = concepts about print, Wrtg Vocab = writing vocabulary test, and Dctn Test = dictation test. Table 12 follows on the next page.

Table 12

Beginning Class Data - School D

Student	Book Level	Ltr Ident	Word Test	Concepts	Wrtg Vocab	Dctn Test
A	2	16	1	6	2	0
B	2	48	1	9	2	5
C	2	49	1	11	8	12
D	2	19	0	7	3	2
E	2	34	0	13	4	5

After diagnostic tests were given to the identified students and reviewed, nine were found to qualify for intervention, which are about 20% of the first graders at School D. Of those nine, five students were included in this study. The teacher/researcher also used the informal observation checklist (Appendix F), as used in schools A, B, and C, which included the categories of comparison/contrast, sequence, part/whole relationships, classification, and analogies. The checklist indicated the areas of main concern for the first grade Reading Recovery students were comparison/contrast, sequence, and part/whole relationships.

Probable Causes

The causes of poor reading comprehension and poor vocabulary skills which lead to lower student achievement are numerous. A combination of home and school factors contribute to the problem. These factors include poor home environment, a high mobility rate, limited-English proficiency, low-income level, an inadequate understanding of brain function, low intellectual ability of students, disregard for students' individual learning styles, inability to make connections, and poor reading skills. While community organizations address problems found in homes, teachers strive to create a productive school environment where all students may succeed.

Home Environment

One of the major causes that contribute to low student achievement is the home environment. This factor includes lack of parental involvement, low income level, and homes with limited proficiency in English. ,Parents need to be actively involved in the student's learning process. Research has found a strong correlation between parents reading to their children and the development of reading proficiency. According to Tracy (as cited by Finn, 1998) the connection between a child's reading to his/her parents and reading achievement is significant, especially if the young reader is guided and corrected by parents. Steinberg (as cited by Finn, 1998) describes parents who are "disengaged." These parents, who are authoritarian in their interaction with their children fail to provide guidance or structure in the family setting. Children whose parents are disengaged exhibit poor developmental patterns and lack psychological maturity, social competence, and self-esteem.

Parental involvement is therefore a major factor in reform efforts and educational interventions. A study conducted by Clark (as cited by Finn, 1998) provided understanding to support this issue. The study involved ten African-American students from poor homes, five which were academically successful, and five which were not. "The researchers discovered that parents of high-achieving students had distinct styles of interacting with their children. They created emotionally supportive home environments and provided reassurance when the youngsters encountered failures." (Finn, 1998, p. 20). The parents in the study also helped their children with homework, discussed school matters, and organized and monitored their out-of-school time. "These parents also exercised reasonable control over non-school activities—television viewing in particular." (Finn, 1998, p. 21).

The children who are at increased risk of reading failure are those raised in poverty, those having limited proficiency in English, and whose parents' reading levels are low. The mobility rate of the students at the four sites, as stated in Chapter 1, may also be a contributing factor to the lack of academic success. "Children who have stimulating literacy experiences from birth onward have an edge in vocabulary development, understanding the goals of reading, and developing an awareness of print and literacy concepts." (Lyon, 1998, p. 17).

Understanding of Brain Function

In our world of continuous change, often students don't think about their own thinking. This is an important reflective process through which they can develop skills that are transferable. Research has discovered that the brain can deal with many parts and wholes simultaneously. According to Crowell (1989), using the knowledge of this research, educators can relate subjects to each other and demonstrate relevance of the subjects to the students.

Brain researchers, Renate and Geoffrey Caine, say "One of the fundamental reasons schools fail is that they impose on learners a single state of unrelieved boredom." (Caine & Caine, 1991, p. 31). Educators need to be aware that the brain has many states of arousal which are closely linked to states of consciousness. These states affect the way the brain deals with information. Brain plasticity is a term used by researchers which means that the physical structure of the brain changes as the result of experience. After researching the brains of rats, they concluded that the brain maintains its plasticity for life.

Students need to be exposed to enriching experiences in the home and school in order for them to process new ideas. When enriching experiences are a part of students' lives, their brains will function in better ways. They will have more meaningful communications and interactions with their world.

Low Intellectual Ability

Sometimes students encounter difficulty with reading comprehension and vocabulary learning because of low intellectual ability. Their academic skills may not be limited enough to qualify them for special education programs; nevertheless, they struggle academically in regular education classes. They are the students who tragically may "fall through the cracks" in large classes. Although these students may more effectively grasp meaning through visual, more graphic learning activities, the appropriate tools are often not utilized in their classrooms.

Sometimes even students who would greatly benefit from the assistance of resource classes are not given special help because of limited enrollment in these classes. Research has indicated that if these students were encouraged to learn in more visually graphic ways, their mental organization would be improved (Sinatra, Berg, & Dunn, 1985, p. 313). Studies conducted by Mayer and McKeachie (as cited by Clark, p. 527) state, "Evidence has begun to accumulate showing that graphic frames support student comprehension and encourage higher order thinking, particularly among low achieving students who have not already developed effective learning or thinking strategies." (p. 527).

Low self-esteem is too often a by-product of this failure to provide students with the most appropriate learning tools. ". . . we may inadvertently disenfranchise multitudes of students from learning." (Sternberg, 1997, p. 20). Students labeled as weak or slow may actually be able to learn in ways that our present educational system neither focuses on nor assesses. There is a need to emphasize students' strengths and help them to become proficient.

Learning Styles

Students come to school possessing a myriad of learning styles. Whether it is because teachers are overworked, because they are at least somewhat unaware of these learning styles, or because they think all children should learn in one specific way, they often have not adapted instructional methods to their students' learning styles. David Pearson (1985) suggests that teachers have played the role of classroom manager when they might better have been coaches and cheerleaders, assisting their students to learn in their individual ways.

Poor Reading Skills

In addition to the previously mentioned factors contributing to low achievement is a student's failure to master general reading skills. Understanding what one reads and vocabulary development are ongoing, lifelong processes. Whether an emergent reader or a mature reader, a person utilizes what Margaret Phinney (1988) refers to as universal reading principles. She cites these principles as confidence, enjoyment, ownership, sight word recognition, strategies, supported reading, and writing. The first three principles would not be possible without a firm foundation in the last four. The development of various strategies can enhance student achievement.

A strategy may be defined as "a general plan of action used in the reading process, one that can be applied in any reading situation to help create meaning from text." (Phinney, 1988, p. 130). Without strategies to assist in the progression of reading, students struggle. Collins and Haviland found (as cited by Alverman and Boothby, 1986) that where strategic skills are lacking, there are higher order difficulties with reading. It is the task of the teacher to help students develop strategies that will enable them to read for understanding.

Another very important part of developing reading comprehension is vocabulary development. Vocabulary must be presented in a significant manner so as to activate stored knowledge. Vocabulary instruction must not be bound by learning the meanings of individual words, but according to Heimlich and Pittelman (1986), attention should be given to the whole conceptual framework of a word meaning. "Because schemata play an important role in the comprehension process, vocabulary development is an important component of comprehension." (Heimlich and Pittelman, 1986, p. 2). The importance of helping students to develop meaningful strategies for learning new vocabulary is imperative. Without these strategies, poor reading comprehension and poor vocabulary skills will continue to generate lower student achievement.

Making Connections

The improvement of comprehension strategies is a main concern of teachers according to Heimlich and Pittelman (1986). After a review of the research that has contributed to a clearer understanding of the comprehension process, it may be defined as ". . . an active process in which readers interpret what they read in accordance with what is already known about the topic, thus building bridges between the new and the known." (Heimlich and Pittelman, 1986, p. 1). The idea of bridging or making a connection is by no means a new thought. Piaget believed ". . . that children's learning is strengthened when new material is conceptually related to previously stored knowledge." (Sinatra et al., 1985, p. 310). The process of connecting or integrating those previous experiences, stored in the brain, with present information is what is referred to as schema theory. A teacher must find ways to assist students in the activation and retrieval of prior knowledge to enhance comprehension.

Continuing Education

Teachers have traditionally sought ways to help make learning happen for their students. "Virtually all teachers are concerned about understanding and strive to teach for understanding. . . Even so, we are not getting as much insight, that is deep understanding, as we would like." (Perkins, 1991, p. 4). In recent years new educational tools, including graphic organizers, that can encourage and enhance this kind of insightful learning, have been introduced. Unfortunately, many teachers have not been aware of these tools or have chosen not to use them either with their students or in their own lesson preparations.

"Although Vitali found the vast majority of teachers to be dedicated, hard-working individuals who want their students to do well, he also discovered that, in general, teachers were ill-prepared to adapt their instructional practices to the new demands of a more authentic, performance-based assessment program." (Guskey, 1994, p. 53). In the past there has been too much emphasis placed on drill and memorization rather than on such processes as inference making and problem solving. Teacher training has not always promoted thoughtful learning. "Often, the teaching of thinking has been pursued as something for its own sake. . ." (Perkins, 1991, p. 6). There is a lack of emphasis on teaching for transfer, on seeing connections and relationships rather than merely learning facts. ". . . most teachers still operate from the mental model of the traditional approach because that is the way they were taught." (Pool, 1997, p. 14).

In summary, the following factors have been found to cause poor reading comprehension and poor vocabulary skills which lead to lower student achievement. The factors include poor home environment, a high mobility rate, limited-English proficiency, low-income level, an inadequate understanding of brain function, low intellectual ability, disregard for individual learning styles, inability to link new knowledge to prior knowledge, poor reading skills, and lack of continuing education of teachers.

CHAPTER 3

THE SOLUTION STRATEGY

Literature Review

A study of current literature reveals that students, both nationwide and at the local sites, experience difficulty and even failure in both reading comprehension and vocabulary skills. Today's teachers seek strategies to address these concerns. Areas that impact the solutions of the problem involve a study of brain research, learning styles, skill development, and the organization of student learning.

Brain Research

Recent studies about the brain contribute to the understanding of student learning. Students' minds can be opened to new ideas, and more productive mental habits can be created. Arnold Scheibel (1997) reports that brain growth and maturation are lifelong processes and are under joint control of natural (genetic) and nurturing (epigenetic) forces. Scheibel reports the old idea of specific teachable moments, which are especially favorable for learning, has been dismissed. Nutrition, emotional stability, interpersonal experiences, and hormonal changes of pubescence are some of the many factors that constantly affect learning according to Scheibel. He believes educators should not simply identify those who excel in mathematics, linguistic capabilities, or biology but should reinforce each student in his or her area of strength while making sure that everyone receives a solid education.

John Bruer (1997) writes that the manner in which new material is understood and remembered depends on prior knowledge. Teachers who recognize the specific skills a student is missing can help the student acquire those skills resulting in a dramatic change in the student's performance and future learning. "After a year in an appropriate curriculum, one that builds on what they know and fills in the gaps of their conceptual structure, at-risk children scored as well as the middle-class children." (Bruer, 1997, p. 26).

Bruer (1997) also suggests using a "Reciprocal Teaching" strategy which explicitly teaches metacognitive monitoring skills. Metacognitive monitoring skills enable an individual to understand the task to be done or a problem to be solved and then to use appropriate strategies needed to accomplish the task. Bruer claims strong readers possess these skills while weak readers do not. The almost unconscious metacognitive monitoring plays a fundamental role in reading comprehension. With the reciprocal teaching strategy, students read a short passage silently, a group leader summarizes it, makes a prediction about what might happen next, and then the group may ask questions about any information that has not been understood. A new student becomes the group leader for the next passage, and students "reciprocate" in the role of student-leader.

Such strategies as reciprocal teaching involve the student emotionally as well as intellectually. Researchers, Cardellichio and Field (1997), refer to the term neural branching, a selective response to multiple stimuli. This neural branching strengthens the brain. In order to encourage neural branching, appropriate frameworks have to be developed to extend the thinking process. "The first step in encouraging neural branching is to develop a structure or framework that will support the kind of inquiry we need to do in the classrooms." (Cardellichio & Field, 1997, p. 34). These frameworks may include looking for corresponding connections, to make analogies which extend mental processes, and web analysis, to uncover complex connections. "The power of web analysis to stimulate neural branching lies in moving beyond the obvious answers to uncover connections that we may not have realized previously." (Cardellichio & Field, 1997, p. 36).

Abbott (1997) states that when students are emotionally involved in their learning, they experience success. He believes the emotional well-being of the brain may be more essential than the intellectual well-being. In further support, ". . . emotion drives attention, which drives learning and memory. It's biologically impossible to learn anything that you're not paying attention to; the attentional mechanism drives the whole learning and memory process." (Brandt, 1997, p. 17).

Marie Carbo (1997) also believes that a good reading program teaches to a child's strengths, not his or her weaknesses. She advocates creating a continuum of reading strategies and placing each child at the appropriate point along that continuum. Her strategies at the lower end of the continuum include shared reading, in which the teacher reads a story from a large book to an entire group of students, and recorded books, which allow a student to read a text or story while listening to a tape of the same material. At the high end of the continuum is the strategy of paired reading in which two students take turns reading a passage or story, and sustained silent reading, where students read alone for periods between 10 and 45 minutes. Marie Carbo reports many teachers in very different teaching situations have used her reading continuum method and have reported dramatic gains in comprehension among their students.

Learning Styles

Research by Skipper (1997) has also indicated that determining a student's learning style and then teaching to his or her strength will improve reading comprehension. Schools that use the learning style approach administer a test to students and group them according to their strengths. Categories include visual strengths (what they see), auditory strengths (what they hear), tactile strengths (involves sense of touch), and kinesthetic strengths (students who are most engaged when they move). Some schools also include additional styles of learning which include analytic learners (who build on pieces of information) and global learners (who need to see the "big picture" before they examine the pieces). It is thought that if a student can be taught through a specific learning style, he or she will understand and make connections more easily. While assessing a student's learning style does not identify the reading level, it assists the teacher in selecting the best approaches to be used with the student. Learning style training helped teachers understand their own differences in how they teach reading and "they began to see why a single approach is not likely to be successful." (Skipper, 1997, p. 37).

The fact that students demonstrate a variety of learning styles is currently being widely acknowledged in educational research. Experts emphasize the necessity to match teaching methods with learning styles. For example, Bernice McCarthy (1997) discusses four learning types-- highly imaginative, the analytic, the common sense, and the dynamic learner. "The teacher must use many instructional methods that are personally meaningful to each student. The more students can travel the cycle, the better they can move to higher-order thinking." (McCarthy, 1997, p. 50).

Howard Gardner's (1997) theory of Multiple Intelligences has also challenged today's educators to consider different ways of knowing. He makes a distinction between multiple intelligences and learning styles. Learning styles are defined as the ways in which one approaches what one does. Gardner (as cited by Checkley, 1992) states, "Multiple intelligences claims that we respond, individually in different ways to different kinds of content, such as language or music or other people. This is very different from the notion of learning style." (p. 13). The learner who experiences difficulty in verbal/linguistic areas, for example, may comprehend material to be learned when visual/spatial or kinesthetic alternatives are offered. Options such as models, drama, field trips, and projects may help students see relationships and make learning connections. Teachers also begin to question more and narrate less. Addressing different intelligences or styles necessitates the addressing of different tools. White, Blythe, and Gardner (1992) believe

> Students do not simply vary from one to another; they vary along several different dimensions. Teachers, too, are strong in some intelligences but not others, and they need to engage students who, for the most part, bear intelligence profiles different from theirs. (p. 129)

As students' learning styles and learning environments are addressed, students become more involved in their learning. They become more interested in problem solving, more courageous in risk taking, and more free in creating. June Hodgin and Caaren Wooliscroft write on their use of the Dunn and Dunn Learning Styles Model, "We expose students to a variety of learning styles elements and discuss how the different elements help or hinder learning ability" (Hodgin & Wooliscroft, 1997, p. 43). Through their development of a learning styles classroom, Hodgin and Wooliscroft found that, "Student mastery of all test objectives increased from 11 percent in 1994 to 67 percent in 1995 to 80 percent in 1996." (Hodgin & Wooliscroft, 1997, p. 45).

The variety of learning styles exhibited in a single classroom setting presents sometimes overwhelming challenges for the teacher. In addition, students must be taught to respect the learning styles of others in the classroom. Carbo (1997) states,

> We teach our students that their own reading styles must not infringe on the styles of others. For example, if some students learn through discussion, they cannot confer with one another near youngsters who require quiet. Students learn to accommodate one another's strengths and compensate for weakness. (p. 40)

This consideration for others' needs can nurture a valuable social skill for life.

Skill Development

Relating the learner's prior knowledge to new concepts is crucial in the development of reading comprehension skills. "Meaningful learning occurs when learners attempt to relate new information to what they already know. Meaningful learning can occur if the material to be learned and the learner's cognitive structure are hierarchically organized." (Thelen, 1996, p. 43). The connection between what has been previously learned and what is being learned at the present time is crucial. In order for a student to be successful and to continue to make academic gains, the connection must be made. "One powerful determinant of what we will learn in a given situation is what we already know." (Guillame, 1998, p. 477). Guillame (1998) continues with five basic strategies that are helpful with accessing and building on prior knowledge. She suggests the use of visuals, manipulatives, shared experiences with children of diverse backgrounds, writing experiences, and linking prior knowledge to new concepts by using such things as semantic maps and K-W-L (Know-Want to Learn-Learned) Charts.

In addition to the connection between prior and present knowledge is the link between vocabulary and comprehension. "In a review of the literature, vocabulary was deemed the most important single factor that accounted for comprehension." (Amerine, 1986, p. 396). Amerine (1986) suggests that the assessment of what students already know about a topic is an excellent starting point prior to teaching text material. She points out that this assessment involves oral language and discussion to stimulate the translation of prior knowledge and the generation of questions to be answered during reading. In her study, Amerine's research dealt with prereading and language development skills which she felt were important for achievement in the content area. She made use of both written and oral prereading activities. Both graphic organizers and multi-vocabulary experiences were incorporated.

Significant vocabulary learning that leads to comprehension must go beyond mere word recognition to meaningful understanding. Students must be able to understand words when they encounter them in different texts. Without mastery of vocabulary a student struggles with comprehension. "We need to teach students strategies they can use to expand their own vocabularies and to master unfamiliar concepts." (Schwartz & Raphael, 1985, p. 199). These strategies are varied. Included in the strategies is the definition of instruction, according to Schwartz and Raphael (1985), which

> . . . stresses the importance of students' being able to figure out new words on their own, instructs them in what types of information make up a definition, and teaches them how to

> use context clues and background knowledge to increase their understanding of words. (p. 199)

One of the strategies suggested by Schwartz and Raphael (1985) is the word map. The word map consists of three relationship categories: the overall class to which an idea belongs, the main properties of the idea and those that separate it from the other members of its class, and finally, examples of the idea. Stated in another way, the search for a word's meaning can be "(1) What is it? (2) What is it like? (3) What are some examples?" (Schwartz and Raphael, 1985, p. 200). The authors felt that the use of word mapping provided a useful strategy for evaluating a student's vocabulary knowledge, a guide when searching for more information, a tool to aid in class discussion, a help in recalling concepts, and a technique to connect word meaning with its components.

The development of vocabulary and its relationship to comprehension has been the basis of research. According to Anderson and Freebody (as cited by Bazeli and Olle, 1995),

> Some hypotheses regarding the relationship between vocabulary and reading comprehension imply that vocabulary instruction will directly improve comprehension, and that experience or first-hand knowledge of a concept is directly related to comprehension. (p. 371)

Bazeli and Olle (1995) found that there is a variety of methods that provide many opportunities for students to interact with words in context that is meaningful. Among the ways listed in their findings were the uses of videos, drawings, computers, visuals, graphic organizers and word sorts. Cousin (1989) also stressed the importance of using a variety of materials to enhance understanding. Among those materials she deemed important were ". . . textbooks, newspapers, trade books, reference materials, etc. In addition, the use of some sort of graphic representation of the events and ideas discussed supported students in understanding the main idea of texts used in class." (Cousin, 1989, pp. 62-63). Graphic organizers (semantic maps, for example) provide a visual structure for grouping and categorizing words, rather than simply memorizing independent definitions.

It is the responsibility of every teacher to create meaningful learning situations for their students. Teachers must strive to help students develop strategies that link prior knowledge to present experiences and to understand the importance of the connection of vocabulary and comprehension. Pearson (1985) states,

> An active-constructive model of comprehension has enormous implications for the role of the classroom teacher in promoting comprehension. A teacher can no longer regard the text as the ultimate criterion for defining what good comprehension is; instead s/he must view the text, along with students' strategies, the task, and the classroom situation, as one facet in the complex array we call comprehension. (p. 726)

Organization of Student Learning

Graphic organizers provide a beneficial means by which these students can organize material and experience meaningful learning. A variety of graphic organizers meets the need to address the variety of learning styles and ability levels. The thinking skills of comparing-contrasting, sequencing, understanding part-whole relationships, classifying, and developing analogies are major components of reading comprehension. A learning strategy that promotes organization of these important components is the systematic use of graphic organizers to aid instruction and learning. "Graphic organizers become a metacognitive tool to transfer the thinking processes to other lessons which feature the same relationships." (Parks & Black, 1992, p. 2).

Creating graphic organizers is appropriate for all students to help them focus on main ideas and related details, integrate prior knowledge with new knowledge, develop concepts, improve writing and thinking skills, provide a focus for discussion, and as a tool to assess student learning. "Graphic organizers make visually explicit the organizational patterns of text. They can be enlisted to facilitate prereading, postreading, prewriting, revising, discussing, and reasoning." (Bromley, Irwin-Devitis, Modlo, 1995, pp. 6-7). Graphic organizers can be used for planning, instruction, teaching, and learning. Bromley et al. (1995) feel they also help improve social skills as students work together to complete organizers as cooperative tasks. They are helpful for a variety of learning styles and abilities. Becoming actively involved in the reading comprehension process increases a student's ability to see connections, to recall important concepts, and to attain higher levels of thinking and reasoning. "As students learn to reorder information visually, they comprehend more fully the material they graph. They also learn to interpret the graphic aids of their textbooks better as they become increasingly adept at graphing." (Johnson, 1989, p. 519).

Johnson (1989) notes that graphing and writing lead to greater learning because they require students to process what they read more thoroughly, according to learning theories about depth processing and elaboration learning. Learning disabled, at-risk students, and those who get poor grades are the ones that seem to benefit the most from using external organizers as reported by Cousin (1989) and Pehrsson and Denner (1989). In a discussion on the importance of helping students overcome obstacles to learning, Pehrsson states, "Organizational strategies can help youngsters remediate weaknesses and build on strengths. They can succeed." (Pehrsson & Denner, 1989, p. 6). The repeated use of graphic organizers over an extended period of time significantly improves comprehension and recall for those who receive classroom training in the use of this learning strategy. ". . . young students do not develop a feeling of 'ownership' of the graphic organizer technique after only a short period of instruction and practice in its use." (Alverman & Boothby, 1986, p. 96).

Comparing new concepts to those already learned allows a student to more clearly understand and remember the new ideas. The more similarities that can be identified, the greater the chance of transfer. By noting differences, students are able to distinguish new concepts from similar ones. This promotes clear understanding and memory by eliminating confusion with related knowledge. "By taking time to 'bridge in' and 'bridge out', teachers help students activate a conceptual pegboard in their minds on which they can hang or integrate new concepts." (McTighe & Lyman, 1992, p. 87). Graphic organizers can be useful tools to connect this prior knowledge to new knowledge.

Compare/contrast diagrams, the T-chart, the fishbone, and the scale (Appendix G) are organizers that facilitate clarifying and understanding of new concepts. Two objects, organisms, people, places, institutions, or ideas are some of the examples that may be compared. Using the Venn (Euler Circles) diagram, or the target (Appendix G) can help to illustrate relationships between or among classes. "In responding to literature, Venn diagrams can be especially helpful for comparing and contrasting such items as characters, themes, and settings. . . diagrams help students understand not only the similarities and differences between characters, but also the nature of their relationships." (Olson, 1992, p. 109).

Comparing and contrasting concepts help students to begin to see analogies, draw conclusions, and understand significance. Higher level thinking skills, which lead to a greater understanding of content material, is a goal all educators strive to accomplish. "Once information and relationships have been recorded on graphic organizers, students then use the pictorial outline to form more abstract comparisons, evaluations, and conclusions." (Parks & Black, 1992, p. 2).

Being able to relate the sequence of events in plots, historical eras, or laboratory instructions are a few of the tasks that require adequate reading comprehension skills. Planning a course of action, considering consequences of decisions, problem solving, and drawing conclusions often need to be sequenced to think through a problem. "Of most significance was the fact that the organizer required students to slow down and think through each problem." (Braselton & Decker, 1994, p. 281). Texts often use time lines (Appendix H) to show events in chronological order. Number lines are very effective when teaching beginning addition or subtraction, and later, clearly show the difference between positive and negative numbers. "In the study of literature, developing timelines often helps students reconstruct and reflect on what happened in the text. . . This task causes a great deal of animated discussion and sends students back to the text as they discuss their varying interpretations of events." (Olson, 1992, p. 109).

Quantitative data is recorded on interval graphs (Appendix H), so students may use the information to explain trends, make correlations, or to determine causes and their effects. Keeping track of relative position, rank, order, or quantity is much more efficient on an interval graph or a ranking ladder. Cycle graphs (Appendix H) are used to show time, direction cycles, or to make clear the repeating characteristics of a trend. The water and the food cycles in science are appropriate topics for this kind of graph.

Computer programmers use flowcharting graphs (Appendix H) to write elaborate programs that are basically a complicated set of yes/no decisions made step by step inside the processor. "Programmers use a standard set of symbols so that the reader may quickly understand the flow of thought represented by the chart." (Parks & Black, 1992, p. 24). Students find flowchart graphs helpful for sequencing school routines or assembling objects, organizing information for writing reports or essays, and in making decisions. A flowchart is an effective way of explaining new math concepts when students need to make decisions about the next step to take when solving a problem.

"Students often perceive the supporting points as disconnected fragments of information, rather than as a conceptual whole." (Parks & Black, 1992, p. 28). To identify parts of stories, results of characters' actions, or events contributing to the story theme, a central idea graph (Appendix I) can be easily utilized. Students learn that supporting data are not facts in isolation but are related to a central theme. They can serve as an aid to comprehension, review, or a guide for designing exhibits. A variety of relationships can be demonstrated with central idea graphs: part/whole, events/consequences, causes/effects, class/subclass, and concepts/examples. It is often used as a prewriting tool to brainstorm ideas or to organize facts.

The central idea graph has variations such as the web, mind map, semantic map, and the arch diagram (Appendix I). To analyze literary characters, a graphic organizer such as a character map (Appendix J) may be appropriate. " It may also be applied to historical figures studied in a social studies class. The social studies teacher who mounts a character map poster on the wall facilitates cross-disciplinary application through the use of this cognitive tool." (McTighe & Lyman, 1992, p. 87). Sinatra, et al. (1985) states that learning disabled students often have nonverbal strengths and show greater gains in comprehension when new material is conceptually related to knowledge they already have. The semantic map helps these students see the connections. As all students receive instruction in the many uses of central idea graphs, they learn to organize cognitively what they hear or read according to Cleland (1981). Margulis (1991) suggests that since mind mapping uses key words instead of phrases, and does not require a knowledge of grammar, or English literacy, students can complete assignments with them even before they become literate in English.

An important component of reading comprehension, vocabulary development and meaning, is efficiently taught with a central idea graph (Appendix I). Students are able to organize a definition of the concept that includes their prior knowledge to determine the meaning of the word. "Concept maps can be quite helpful in presenting information about synonyms, multiple meaning words, and other semantic relationships that are often difficult to explain." (Schwartz & Raphael, 1985, p. 204).

Branching diagrams (Appendix J) allow elaborate relationship systems to be represented visually. In studying material in science, newspapers, magazines, and math texts, students record information about classes and subclasses on these diagrams. Graphs of family trees, hierarchical relationships, and complex systems are examples often seen in texts. "However, providing the completed diagram . . . does not offer the student the opportunity to recognize complex relationships in a passage without assistance. A student who completes the diagram independently is more likely to identify complex relationships in a passage." (Parks & Black, 1992, p. 35). The prediction tree organizer (Appendix K) is an example of a prereading tool that has often been introduced by reading teachers as a motivation devise to create interest in a story. Students not only enjoy finding out if they have correctly guessed what will happen next, or if they were right about the end of a story, but are able to recall details and important points connected with their predictions.

Many learn to read a matrix diagram (Appendix K) long before they know what it is called. A bus, train, or airline schedule, mileage charts, class schedules, and statistical reports are familiar matrixes. Data becomes easily and quickly understood when two characteristics are recorded and cross referenced on a matrix diagram. Several pictures, stories, or historical events can be compared using this kind of tool. The matrix helps to organize information from written passages and to draw inferences to form generalizations from pictures, passages, or artifacts. When thinking is organized in this way, similarities and differences can be analyzed, and conclusions can be drawn. "The thinking matrix allows for shared metacognition in which teacher and students have a common framework for generating and organizing thought, as well as for reflecting on it" (McTighe & Lyman, 1992, p. 79). The KWL, question matrix, grid, PMI, information chart, or the agree/disagree chart (Appendices K & L) are matrix diagrams that can be very helpful in almost any subject area. Number patterns or functions can be illustrated, information can be reported in schedules, charts, or tables, and several characteristics of literary or artistic works can be compared.

According to research, graphic organizers are tools which can be used by teachers and students to represent abstract or implicit information in a more concrete form. Relationships between facts and concepts can be displayed visually. New information can be related to prior knowledge, and information can be stored and easily retrieved. Ideas can be generated and organized for writing, and the organizers are a way to assess student thinking and learning. Graphic organizers ". . . support and organize thought, but they do not do the thinking. They are guides, not recipes." (Clarke, 1991, p. 526). Despite the research findings, in most classrooms the use of graphic organizers is very limited or nonexistent. In order to demonstrate the value for using these tools, more classroom research needs to be done. With the regular use of graphic organizers, "....students come to recognize that thought can be shaped, teachers discover a set of powerful tools for rendering the invisible process of thinking visible, and both students and teachers experience the benefits of shared metacognition." (McTighe & Lyman, 1992, p. 83).

Project Objectives and Processes

As the result of using graphic organizers, the targeted elementary and seventh-grade students will improve in reading comprehension and vocabulary, as measured by post testing, teacher observation checklists, and writing samples. These interventions will be implemented during the period of August 1998 through December 1998.

In order to accomplish the project objective, the following actions are necessary:

1. Introduce graphic organizers to improve comprehension and vocabulary skills.
    a. Clarifying and understanding concepts
    b. Showing sequence and order
    c. Depicting main ideas, details, and their relationships
    d. Comparing and contrasting elements
    e. Making analogies

2. Instruct students in the appropriate use of graphic organizers to be used throughout the unit of study.

3. Assess students' comprehension and vocabulary skills using observation checklists, writing samples, and tests at designated intervals.

Project Action Plan

I. Collection of Data

   A. Give parent survey (First month)

   B. Give student survey (First month)

   C. Complete teacher observation checklist (Sept. 15, Oct. 30, & Dec. 15)

      1. Comparison/Contrast

      2. Sequencing

      3. Part/Whole

      4. Classifying (grades 5 and 7)

      5. Analogy (grades 5 and 7)

   D. Collect cumulative folder information (First two weeks)

      1. Test scores

      2. Grades

   E. Collect writing samples (Sept. 15, Oct. 30, & Dec. 15)

   F. Give skills tests (Second week)

II. Intervention

   A. Tasks carried out using graphic organizers.

1. Comparison/Contrast
    a. Venn diagram
    b. Matrix
    c. Word Map
    d. Compare/Contrast Diagram
2. Sequence
    a. Cycle Graph
    b. Ladder
    c. Spectrum
    d. Sound Segment Boxes
    e. Story Map
    f. Sequence Chart
    g. Time Line
3. Part/Whole Relationships
    a. Mind Map
    b. Umbrella Diagram
    c. Web
    d. Arch Diagram
    e. Central Idea Graph
    f. Scale
    g. Story Book Organizer

        - H. Target
    - 4. Classification
        - a. Matrix
        - b. Branching Diagram
        - c. Fishbone
        - d. Mind Map
        - e. Character Map
        - f. Target
        - g. Flowchart
        - h. Class Relationship Diagram
    - 5. Analogies
        - a. Flowchart
        - b. Thinking chart
        - c. Word Web
        - d. Matrix
- B. Writing samples.
    - 1. Sentence writing (grades 1 and 2)
    - 2. Paragraph writing (grades 2, 5, and 7)
        - a. Central Idea Graph
        - b. Arch Diagram
        - c. Mind Maps

        - d. Umbrella Diagram
    - 3. Essay writing (grades 5 and 7)
        - a. Central Idea Graph
        - b. Arch Diagram
        - c. Sequencing Time Line
        - d. Mind Maps
        - e. Web
        - f. Cheeseburger Diagram
    - 4. Entries in learning logs (grades 2 and 7)
- C. Timetable
    - 1. Duration of sixteen weeks.
    - 2. Activity in each skill area carried out once every four weeks.
    - 3. Length of activity - at least twenty minutes.

III. Methods of Assessment

- A. Comparison of pretest (Sept. 15) and post test (Dec. 15)
- B. Analysis of observation checklist activities (Sept. 15, Oct. 30, & Dec. 15)
    - 1. Comparison/Contrast
    - 2. Sequencing
    - 3. Part/Whole
    - 4. Classifying
    - 5. Analogy

C. Analysis of writing samples (Sept. 15, Oct. 30, & Dec. 15)

1. Sentences (grade 1)
2. Paragraphs (grades 2, 5, and 7)
3. Narrative, persuasive, or expository essays (grades 5 and 7)
4. Learning logs (grades 2 and 7)

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

The objective of this project was to improve comprehension and vocabulary skills in order to raise student achievement. Implementation of the action plan included the use of a variety of graphic organizers to improve these skills. Reading comprehension and vocabulary skills targeted in an observation checklist (Appendices C-F) included comparison/contrast, sequence, part/whole relationships, classification, and analogies. Graphic organizers were also used before the writing of sentences, paragraphs, essays, and learning logs to improve thinking skills, sequence, part/whole relationships, and comparison/contrast.

Comparison/Contrast

In an attempt to organize student thinking the teacher/researchers utilized an observation checklist(Appendices C-F). The first strategy addressed on this checklist was that of comparison/contrast which is a necessary component in reading comprehension and understanding of vocabulary.

In order to promote a more organized approach to comparing and contrasting subject matter, several graphic organizers were used for the fifth graders at School A. While comparing the distances of the planets in the solar system, students used toilet paper rolls to measure out the distance of each planet from the sun (example: Mercury = 3 sheets from sun, Venus = 6 sheets, Earth = 8 sheets, Mars = 12 sheets, Jupiter = 40 sheets, etc.). This information was then plotted on a matrix (Appendix M) in order to compare the planet distances. Another activity used to compare and contrast word definitions utilized a word map (Appendix N). Students placed a word in the center, an arrow to the top box told what the word was (classification), three boxes to the right told what the word was like (descriptions), and three boxes on the bottom gave examples of the word. For the final activity, students compared and contrasted the Miss Nelson and Miss Swamp characters from Miss Nelson is Missing (Allard, Marshall, 1977). They used a compare or contrast diagram (Appendix O) to show similarities and differences in their physical description, personalities, control of the class, actions of the students, and outcomes for each character. Students also used a brainstorming web (Appendix I) to think of descriptive words for each character.

At School B, the first attempt on the part of the second graders to compare and contrast was tried in mid-September. They were simply told to look at pictures of an elephant and a cat and then list the differences and likenesses on a piece of paper. The second attempt to compare and contrast involved the use of a Venn diagram (Appendix G), the success of which was entered on the checklist in late October. The children listened to a story about a little witch and her pumpkin house (Appendix P). They were then instructed to make the comparison between the little witch's house and their own home, using a Venn diagram. The final attempt to compare and contrast occurred during a science lesson in mid-December when the children were asked to compare the clay model of a virus they made with the written description of a real virus.

In the first comparison/contrast activity, seventh grade students at School C were directed to find similarities and differences between the words in their first vocabulary unit. Students chose different categories for this exercise, including definition, prefixes, and suffixes. On the second application students were asked to compare and contrast two versions of a story using a Venn diagram (Appendix G). They were told from two different points of view. The third comparison/contrast activity also involved study of literature, two short poems. Once again the Venn diagram was utilized. Students were asked to identify three unique characteristics of each poem and four similarities between both.

The first attempt to compare and contrast by the first grade Reading Recovery Students at School D involved the children looking at pictures of airplanes, boats, and cars. The children, orally, told the teacher/researcher how they were alike or different. The second attempt involved the use of a Venn diagram (Appendix G). After reading a story about moms and dads, they were instructed to compare moms and dads in the story to their own. The final attempt to compare and contrast also involved the use of the Venn diagram. After reading the story "The Lion and the Mouse," the students were instructed to compare and contrast the attributes of the main characters.

Sequence

The next area addressed by the teacher/researchers was that of sequence. Being able to order events of a story aids understanding.

Being able to sequence the events in a story is an area of concern for fifth graders at School A. Students studied the rock cycle in science and practiced showing the life cycle of igneous, sedimentary, and metamorphic rocks on a cycle graph (Appendix Q). During literature circles, while discussing In the Year of the Boar and Jackie Robinson (Lord, 1984), students were assigned sections of the book to portray in a story map (Appendix R). They listed the setting, characters, problem or goal, ordered events, and the ending of the section on their story map organizer. Since the story of Shirley Temple Wong was told over a period of one year, students kept time lines (Appendix S) in their journals by months to note changes in the main character and how each affected her.

In mid-September for the beginning activity, at School B, the second-grade children read the story of "The Ugly Duckling" from their reading text. They were then asked to draw the story in a series of pictures. The next exercise demonstrating sequence, which was recorded on the checklist in late October, involved the use of a spectrum (Appendix H), which resembled a time-line. The children completed the spectrum after reading a story in their basal reader. The final entry on the observation checklist regarding sequence included the use of a sequence chart (Appendix L) and was completed mid-December. The chart was comprised of a series of boxes connected with a single line. The children worked in groups to retell another story also taken from the basal reader.

For the first sequencing activity, the seventh grade students at School C were given a one-page short story to read. They were then asked to place in chronological order six events from the story. They were not permitted to refer to the story while numbering these events. For the second sequencing activity, the students again read a brief (one-page) story. This time, however, they were given a sequencing chart (Appendix T) to use in ordering the events of the story. Again, they were quizzed by being asked to place in chronological order six events from the story. On the third try, a similar procedure was followed. This time students were provided with a graphic organizer in the form of a ladder (Appendix U). Students were asked to write on the rungs of the ladder, in chronological order, events from the story. Students were encouraged to study this before being quizzed on the chronological order of six events in a quiz. All three stories used for this segment were selected from the same collection.

In order to assess sequencing skills of the first graders of School D, the teacher/researcher designed sound segment boxes (Appendix V) within which to place the sounds that had been articulated. During the first attempt the teacher/researcher modeled the task by articulating a word very slowly and pushing counters into the boxes sound by sound. Next the child would articulate slowly while the teacher/researcher pushed the counters. During the intermediate stage of this assessment, the teacher/researcher instructed the children to use the words which they wanted to write in their stories. The teacher/researcher drew organizer boxes (Appendix W) on the practice page of the children's writing journals. Although the children recorded any sounds for those of which they knew the letters, the teacher/researcher ensured that they would go into the correct boxes. The teacher/researcher accepted what the children could hear in any-order, not insisting on a beginning to end approach. The children were not expected to have control of this task during this intermediate attempt. The teacher/researcher required the children to identify all of the sounds in sequence during the final assessment of this skill. This required the children to fill in the letters in the organizer boxes from beginning to end, from left to right and then to construct a sentence.

Part/Whole Relationships

The third category on the observation checklist (Appendices C-F) was that of part/whole relationships. Learners benefit from the ability to relate parts to whole.

In order to help the School A fifth graders find the main ideas and their related details, several lessons were used. To find ideas and examples of courage for an expository essay, the teacher/researcher started with a web diagram (Appendix I). The word "courage" was placed in the center of a large piece of paper on the board, and the class brainstormed as many ideas of courage as they could imagine. They were encouraged to go beyond the dictionary definitions. Then examples of many courageous acts were discussed, using the web diagram. Students prepared to write their body paragraphs for essays by placing their main idea for each paragraph at the top of an arch diagram; their details were connected in the middle, and the concluding sentence was written at the bottom. A central idea graph (Appendix X) was used in science for students to take notes on each section of reading in the text. They needed to list three facts under each heading, study what they noted, and be ready to discuss their facts the next day.

The third issue addressed by School B second graders was that of part/whole relationships. Two areas of concentration were included. They were vocabulary mastery and the concept of main ideas and details. The items to be included on the checklist were vocabulary and comprehension sections taken from the end of the first unit reading test. This first observation, done in mid-September, included the scores of the unit test. Mind maps (Appendix I) were used to reteach both the vocabulary and the comprehension section of the first end of the unit reading test. The teacher recorded the children's thoughts on a mind map on a large piece of paper. The second item on the checklist included the use of a web graphic organizer (Appendix I). The children, working in groups, were asked to complete webs for the vocabulary section of each story in units two and three of their basal reader, in late October. The children wrote each vocabulary word in the center of each web. Then they drew lines out from the center on which they wrote words that dealt with the meaning of the word or words that reminded them of the meaning of the word. The children also used webs for ascertaining the main idea and details of several stories in those reading units. The main idea was written in the center of the web with the details being written on the lines radiating out from the center. An umbrella diagram (Appendix Y) was used for the third part/whole activity (Hamilton, 1997), and the results were recorded mid-December. On the open section of the umbrella the children were instructed to write the vocabulary word and then list its attributes on horizontal lines drawn out from the shaft of the umbrella. The same diagram was used for the main idea, which was written on the open part and the details, which were written on the horizontal lines.

On their first experience with part/whole relationships, School C seventh grade students were asked to read a one-page story. They were then asked to list from memory eight items from the story that related to the Medieval theme. The second selection used for this activity was a one-page biographical story about Alexander the Great. Students were then given a graphic organizer designed as a scale (Appendix Z). They were asked to list on the one side of the scale the physical characteristics of Alexander the Great and on the other his accomplishments. A ten-question true-and-false quiz was then administered. The third selection was a short story with a Christmas theme. Students were asked to give eight examples of the theme of caring and giving on a web (Appendix AA). The web was used as the evaluative tool.

The third issue addressed by the first graders of School D was that of part/whole relationships. Three graphic organizers were used during this portion of the research. The concept of main ideas and details was addressed through the use of a story book organizer (Appendix BB).

The target organizer (Appendix CC) was utilized to show the parts of whole words. In the first attempt to address the issue of part/whole relationships, the teacher researcher read very simple stories to the children, after which the children picked a favorite story to author. A story book was constructed to organize the events of the whole story. A piece of construction paper was folded in half for the book cover. The students were instructed to draw a picture on the cover depicting the main idea of the story. The teacher/researcher modeled writing the title of the story and the students were instructed to write their names on the book cover. The inside pages of the books were plain white paper. On the inside pages of the books the children were instructed to draw and write what they could describing the details of the story. The students wrote all they could independently, but the teacher/researcher wrote most of the words since Reading Recovery children have few strategies for responding to print. During the second attempt, the concept of part/whole relationships was addressed by breaking words into parts. The target organizer was utilized for this activity. A whole word that was known to the children was placed in the center circle of the target. Parts of words such as endings or first letters were placed in the outer circles, as the word was broken into parts. During the final observation the children were given a cut up sentence (Appendix DD) to reassemble. The teacher/researcher cut up a sentence into language units which the teacher/researcher thought that the children would be able to reassemble. The segments cut up were first letters of words, endings of words like -ing, -s, -ed, and syllables in two syllable words like ba/by.

Classification

The strategy of classification was assessed in the fifth and seventh grades. This skill was not considered a concern at first or second grade. The ability to classify items into categories helps students understand similarities and differences as they read.

Since the current research emphasizes that connecting new knowledge to prior knowledge is essential for reading comprehension, classification of information into categories is a necessary skill. To aid School A fifth grade students in the task of studying nouns, a branching diagram (Appendix EE) was used. Students listed nouns on the proper branch by determining if the nouns were persons, places, or things, and determining if each noun was common or proper. During reading lessons, students described characters by their attributes and gave examples of each on a character map (Appendix FF). In math, while studying quadrilaterals, students used many organizers. They classified quadrilaterals by shape in a matrix (Appendix GG). Students described their shapes by placing them in a target diagram (Appendix GG). Quadrilaterals were named by describing right angles, parallel sides, or equal sides in a flowchart (Appendix HH). A branching diagram (Appendix HH) was used to name quadrilaterals described by right angles, parallel sides, or equal sides. Class relationship diagrams (Appendix II) were also used to identify terms which describe shapes of quadrilaterals by number of sides, size of angles, equal sides, or parallel sides.

Students in the targeted seventh grade group of School C were asked to devise a classification system of their own choosing for the words in three vocabulary units (Units 1-3). They chose different criteria for these classification groupings such as number of letters in a word, number of syllables, and beginning or ending letters. To better learn the words in the fourth unit, students were asked to use the fishbone graphic organizer (Appendix JJ). Again, students could choose the classifications for their groupings of words, but the fishbone offered a specific structure. To better learn the meanings of words in another unit, students were instructed in the use of the mind map (Appendix I). They then individually devised their own mind maps for the words and meanings.

Analogies

The ability to recognize analogies helps the reader make connections. The skill of analogies was assessed at fifth and seventh grade. It is introduced in the first and second grades, but not until late in the year.

When students write descriptions and try to make clear points in their essays, making analogies that the reader can relate to is essential. Fifth graders of School A used a word web (Appendix I) in order to keep many words handy for writing essays. They brainstormed their ideas in small groups and were encouraged to use the webs to make analogies in their essays. The hardness of rocks and minerals in science was compared to the hardness of fingernails, copper, steel, glass, and quartz on a matrix (Appendix KK). Identification of unknown rocks and minerals were made using a flowchart (Appendix LL) to compare the rocks with the characteristics of hardness, streak, color, luster, or cleavage of known rocks and minerals.

Three different sets of analogies were presented to School C's targeted seventh-grade students during the period in which the action research was conducted. In each case students were given one pair of words and the first word of the coordinating pair. They were directed to complete the analogy by choosing one of four suggested words. On the first try students were asked to follow this procedure without the aid of graphic organizers. The teacher/researcher merely reviewed the nature of analogies and discussed the types of word relationships involved. On the second occasion, students were given a central idea graph (Appendix MM). The teacher/researcher with the students, orally, generated several analogies (with different relationships represented). Students wrote these on their graphic organizers and studied them before trying the analogy sheet for the day. They were permitted to leave the graphic organizer on their desks. Before students completed the third analogy activity, they were given copies of a thinking chart (Appendix MM). Again, the teacher/researcher encouraged oral discussion of analogies and asked for examples of different relationships that appear in analogy activities. Students were once again allowed to leave the graphic organizers on their desks while they completed the analogies.

Writing Samples

Prior to writing sentences, paragraphs, and essays, a variety of graphic organizers was used to assist students in organizing their thinking. The ability to express thoughts in writing is an indication of student understanding of similarities and differences of subjects. Students also need to know how parts fit to wholes, how they classify new information, and how new material is related to their previous knowledge.

In order to write the five-paragraph essays required of fifth graders at School A, students need to organize information and clearly state their thoughts. The teacher/researcher began the teaching of persuasive writing with the composing of a good excuse paragraph. A central idea graph (Appendix I) was used to place the situation needing to be excused in the center, the reasons for excusing in boxes on the sides, and a plea in the concluding sentence box at the bottom. Students used their organizer to write the excuse paragraph. An arch diagram (Appendix I) was used to set up the body paragraphs for the persuasive essays on the pros or cons of cheating. The reasons for cheating or not cheating were placed at the top of the arch, three details explaining their reason were recorded in the middle, and a concluding sentence was written on the bottom. Students made three arch diagrams, one for each body paragraph, then added an introductory paragraph, and a concluding paragraph for their essay. For a narrative essay on life alone in the wilderness following a plane crash, students used a sequencing time line (Appendix NN) to record the introduction, rising action, climax, and falling action before writing their stories (Wisniewski, 1996).

School B's second graders created their own mind maps (Appendix OO) which were used to write an original paragraph. The web organizer (Appendix PP) was also used to help the children organize their thoughts for composing a paragraph. The paragraph was to reflect the use of the web to demonstrate the main idea and the details. A final method of organizing writing was the use of the umbrella, a strategy presented in the Power Writing Program (Hamilton, 1997).

Students in School C's targeted seventh grade group were asked to write an expository paragraph comprised of a topic sentence, three supporting sentences and a concluding sentence. Three topic sentences were suggested, but students were permitted to choose their own. They were not provided with a graphic organizer to aid them in the planning of the paragraph. On a later occasion, students were asked to write a paragraph on the topic "My Favorite Snack." The same structure of a topic sentence, three supporting sentences, and a concluding sentence was assigned. This time each student first used a graphic organizer illustrating the parts of a cheeseburger (Appendix QQ) to plan the paragraph. A similar procedure was followed in the writing of two five-paragraph essays. Students were given a checklist of required elements for the narrative essay.

Before the second of the essays was written, however, students were asked to construct a mind map (Appendix RR) to be used in planning the essay. Students also wrote in learning logs. They recorded their reactions to various class activities, including the use of graphic organizers. The learning logs were kept in the classroom in a designated place and were distributed to students following activities tried.

School D's first graders generated one or two sentences each day in their writing journals. The teacher/researcher wrote the student's sentences on sentence strips organizers (Appendix DD) that were cut up into language units and reassembled by the students.

Presentation and Analysis of Results

In order to assess the effectiveness of graphic organizers as a strategy to increase reading comprehension and vocabulary skills, several methods of data collection were utilized by the teacher/researchers. These methods included an informal observation checklist (Appendices C-F) with documented entries, work samples, test scores, student reflections, and a weekly teacher's journal. A detailed presentation and analysis of data collected at each site follows.

School A

The researcher in School A completed an observational checklist (Appendix C) of the students in the following skill areas: comparison/contrast, sequence, part/whole relationships, classification, analogies, and writing samples. Observations in each area of intervention were completed every four weeks through the end of the second quarter. The time period of observation was extended from 16 to 18 weeks to collect test date. Mastery of 80% or better for each skill is indicated by a +. **Not yet** indicates students not achieving an 80% or better score on the activity.

Data is presented as percentages of students out of 20 that either achieved or did not achieve mastery at the beginning of the study or after each intervention was tried. Table 13 follows.

Table 13

Observation Checklist Results - School A

Targeted Comprehension Skills	Mastery	Start	1st Inter	2nd Inter	3rd Inter
Comparison/Contrast	+	25	75	60	95
	not yet	75	25	25	5
Sequence	+	55	85	75	70
	not yet	45	15	25	30
Part/Whole	+	55	90	95	90
	not yet	45	10	5	10
Classification	+	80	75	100	80
	not yet	20	25	0	20
Analogies	0	35	90	80	60
	not yet	65	10	20	40
Writing Samples	+	85	95	100	90
	not yet	15	5	0	10

+ indicates mastery at 80% or above; **not yet** = students did not reach mastery; percentages of students out of 20 are reported

The initial pretest data showed that only 25% of the class could successfully compare two paragraphs. The results after intervention in the area of comparison/contrast clearly show the positive effects of graphic organizers when comparing two or more ideas. Students had been familiar with the Venn diagram and were anxious to try the matrix, word maps, and compare/contrast diagrams (Appendices G, K, & L). Many asked if they could make a diagram for their answers on tests at the end of chapters. Seventy-five percent of the students found it easy to compare planet distances using a matrix (Appendix M). After using their word maps (Appendix N) for unfamiliar science words to tell what a word is, what it's like, and giving three examples, 60 % of the students found that learning new scientific terms was not hard. In a comparison of Miss Nelson and Miss Swamp after hearing Miss Nelson is Missing (Allard & Marshall, 1977), using the compare/contrast diagram (Appendix O) helped 95% of the students focus on the likenesses and differences of the two teachers and then to write a very organized comparison paragraph.

Students were given a sequencing pretest and only 55% showed mastery of this skill. Eighty-five percent were able to sequence the life cycles of igneous, sedimentary, and metamorphic rock after practicing with a rock cycle graph (Appendix Q). A story map (Appendix R), used with In the Year of the Boar and Jackie Robinson (Lord,1984), helped 75% of the students to sequence important events. Using the same book, students also kept a monthly time line (Appendix S) that paralleled important changes in the main character's life. Seventy percent achieved mastery of sequencing using a time line. For those who did not achieve mastery, it was noted their time lines and story maps were not as complete as those who did well. They need more instruction in finding the most important events to list on their graphic organizers.

The addition of graphic organizers to activities emphasizing part/whole relationships was very beneficial. Fifty-five percent of the students had mastered the skill according to the pretest given. Using the web (Appendix I) for brainstorming helped students gather ideas for their expository essays on courage. An arch diagram (Appendix I) was used to organize a good excuse paragraph. Science notes were placed in a central idea graph (Appendix I). Mastery of part/whole relationships was achieved by many students with scores of 90%, 95%, and 90%, respectively, on these three activities. Students found their tasks easier when they were able to place facts in a certain place. One student commented in science class, "I like filling in these boxes."

Classification is an important reading skill in many subject areas that tends to become more complicated as the reader advances to higher grade levels. It is for this reason, this researcher decided to include classification in the observation even though 80 % of the class scored mastery on their pretest. Seventy percent of the students achieved mastery of nouns after using a branching diagram (Appendix EE) to separate persons, places, things, common, and proper nouns. After using a character map listing attributes (Appendix FF), 100% of the students achieved mastery on that activity. The study of quadrilaterals was enjoyed by many math students using a matrix, a target, a flow chart, a branching diagram, and class relationship diagrams (Appendices GG, HH, & II). Eighty percent of the students could classify quadrilaterals by shape, angles, parallel sides, or equal sides. They had fun showing what they learned in a drawing of Mac-A-Lena in Quadrilateral Land after instruction (Chapman, 1993).

Students' ability to make analogies, according to their pretest, was very poor. Only 35% achieved mastery. Before writing an essay on courage that explained why courage is much more than just the dictionary definition, students used a central idea graph (Appendix I) to brainstorm many other examples of courageous acts. Their essays included courage to tell the truth, the courage to perform before classmates, the courage to perform heroic acts, and many more. Determining the hardness of rocks and identifying rocks and minerals by characteristics was made much easier using a matrix and flowchart (Appendices KK & LL). Students felt like experts when they were able to decide the name of their unknown rock by themselves using a flowchart. Mastery of analogies was noted as 90%, 80%, and 60%, respectively, on the three activities. The use of graphic organizers clearly made a difference for students working with this difficult skill.

Being able to write organized five-paragraph essays is a necessary skill for the Illinois Student Achievement Test (ISAT) and for successful completion of language arts in fifth grade. Eighty-five percent of the students were able to write an acceptable descriptive paragraph (Appendix SS) at the beginning of the year. The three essay types required include persuasive, expository, and narrative essays. Before writing a persuasive essay, a central idea graph (Appendix I) helped 95% of the students master this skill. Then, 100% of the students wrote a successful persuasive essay using their arch diagrams (Appendix I) to organize the body paragraphs. Telling a successful story with a good introduction, rising action, climax, and a good conclusion was made much easier using a sequencing time line (Appendices NN & UU). Ninety percent of the students were successful on this attempt. Student writing is more organized when graphic organizers are used because ideas are more fully explained, examples are given, and thought is given to connecting one paragraph to the next.

Overall reading comprehension and vocabulary gains and losses (Appendix VV) for School A were measured using the S.T.A.R. computer tests (1996). Table 14 shows an analysis of the results. The beginning grade equivalent, gain or loss, and ending grade equivalent is given for each student. The computer program automatically adjusts the test to the skill level of each student. Table 14 follows showing the results on the next page.

Table 14

S.T.A.R. Pretest-Post Test Results

Gained 1 or more grade equivalent	Start	Gain or Loss	End
B	6.1	1.8	7.9
H	4.9	1.2	6.1
J	4.7	1.6	6.3
K	5.6	1	6.6
M	5.3	1.9	7.2
N	5.3	1.4	6.7
Gained less than 1 grade equivalent	Start	Gain or Loss	End
A	7.1	0.2	7.3
C	4	0.4	4.4
D	4.7	0.9	5.6
L	5.2	0.4	5.6
Q	5.5	0.5	6
T	3.3	0.3	3.6
Stayed the same	Start	Gain or Loss	End
S	6.1	0	6.1
Lost less than 1 grade equivalent	Start	Gain or Loss	End
F	7.5	-0.6	6.9
I	11.6	-0.5	11.1
O	6.9	-0.2	6.7
P	6.6	-0.1	6.5
R	5.6	-0.4	5.2
Lost 1 or more grade equivalent	Start	Gain or Loss	End
E	6.8	-1.2	5.6
G	5.6	-1.5	4.1

Students who gained one or more grade level are all reading at least a year above grade level. Of those six students, all but one started the year at or below grade level. Six students gained between two and nine months in grade equivalents. Five students show a loss of less than one grade equivalent, but four of the five are still scoring at least a year above grade level. Of the two students who lost more than one grade level, one was in a hurry to go to lunch and the other scored at grade level on the post test. The second student's score may be a more accurate evaluation of his reading ability than the score on his pretest when this score is compared to other work he has done in reading. This researcher feels the impressive increases in reading comprehension and vocabulary skills for 60% of the students are due to the increased use of graphic organizers in every subject area.

School B

The researcher in the second grade classroom of School B analyzed data recorded on an observation checklist. (Appendix D) The data was obtained over a period of time from mid-September until early February. This was an extension of the original timeline, but the extension was necessary to complete the applications and make meaningful observations based on the scores from tests at the end of each reading unit to determine the growth skills on the part of the second grade children in the study. The three skill areas included at this site were comparison/contrast, sequence, and part/whole relationships. At this level the children appeared not to be encountering problems with classification. Analogies were excluded from this checklist because that is a skill addressed at the end of the year.

The data compiled from the checklist are shown on Table 15. Observations in each area of intervention were completed every four weeks through the end of the second quarter. A + indicates a mastery of 80% or better for each skill, while **not yet** indicates students who did not achieve 80% or better on a specific activity. Percentages of the scores attained by the 18 children are shown on the table. The data presented clearly demonstrate an increase in the 80% or + columns over the course of the study, while there is a decrease in the **not yet** columns. Table 15 follows.

Table 15

Observation Checklist Results - School B

Targeted Comprehension Skills	Mastery	Start	1st Inter	2nd Inter
Comparison/Contrast	+	61	83	88
	not yet	39	17	12
Sequence	+	72	72	94
	not yet	28	28	6
Part/Whole-Vocabulary	+	66	88	94
	not yet	34	12	6
Part/Whole-Comprehension	+	38	55	94
	not yet	62	45	6
Part/Whole-Writing Samples	+	55	61	88
	not yet	45	39	12

+ indicates mastery at 80% or above; **not yet** = students did not reach mastery; percentages = students out of 18

Without much teacher direction on the first attempt to compare and contrast, most of the second graders made lists, but some lists didn't compare the animals well. One child asked, "How do we do it?" The teacher instructed the children to do their best. The success rate of the group was 61%. In the following days and weeks, the teacher introduced the Venn diagram (Appendix G) to the children. Several children exclaimed they thought it was "Cool!" when seeing the Venn for the first time and learning its value. On the second attempt, 83% of the children were able to successfully construct a Venn to complete the task of comparing a pumpkin with their own home (Appendix P). The last recorded attempt involved the comparison of a clay model of a virus with the description of a real virus. At that time, 88% of the children were able to successfully complete a Venn (Appendix WW). This intervention clearly made an impact on the second graders' ability to compare and contrast when asked to do so.

Another skill that was addressed was that of sequence. Early in the year the children, with the help of their teacher read the story, "The Ugly Duckling". They were asked to tell the sequence of the story (Appendix XX). Since many of them were experiencing difficulties writing about it, the teacher instructed the children to draw the sequence. It was noted that 72% of the children were able to do the task. The next attempt to instruct the second graders in the skill of sequence involved the use of a spectrum (Appendix H). This graphic organizer is similar to a timeline. Only 66% of the children were able to complete the task. It seemed to be too abstract for the second grade children. They had a difficult time placing the events on the line in the proper place. The last strategy explained to the children was a sequence chart (Appendix H), similar to a flow chart. Ninety-four percent of the children were able to trace a story in writing from their basal reader on the sequence chart.

The third endeavor of the study included activities aimed at assisting the children with their part/whole relationships. There were three areas that were looked at including vocabulary, comprehension, and writing. Vocabulary and comprehension samples were taken from the end of unit reading tests. The writing samples were taken periodically during the study. The graphic organizers used in this part of the project included the mind map, the web, and an umbrella. (Appendices I & Y) The mind mapping seemed to be more difficult and confusing to the children. The teacher used large pieces of paper and markers in an attempt to demonstrate this technique to the class. The second graders were able to complete the task of filling in the mind map with the teacher, but not individually. The teacher then tried using a web (Appendix YY). The children often worked in groups to fill in the webs, but were also adept at making webs individually. Before using the web with vocabulary, 66% of the children were successful with a vocabulary test. After practicing with the web, 88% were successful on the next unit test. The biggest improvement was seen in the third unit test of vocabulary when 94% of the children achieved mastery of their words. It is the belief of the teacher/researcher that the use of the web attributed to this. Comprehension achievement was studied using the same manner. Once again the children preferred the web and were able to use it better than the mind map, which they found to be confusing. Before using the web, only 38% were successful in achieving mastery status on the first reading unit test. The next unit test showed that 50% of the children achieved comprehension mastery. On the third unit test 94% of the children achieved mastery. These scores are strong indicators of the promise of using graphic organizers.

The final area considered was that of the children's writing. A sample was taken in mid-September. Some of the second grade children could not write a complete sentence, while some wrote several rather disjointed thoughts. They had read a story about the characters Frog and Toad. The children were instructed to write another adventure for Frog and Toad (Appendix ZZ). Only 55% of the children were able to write in an organized fashion. The web was applied in their writing, but something they liked even better was the umbrella organizer as previously described on p. 60 of this chapter. Using this method of thought organization, 61% of the children were successful when the next sample was taken. The last sample using their umbrella organizers (Appendix AAA) found 80% of the second graders achieving good organization of their writing skills. When asked which of the organizers they preferred for writing, they liked the umbrella the most. "It really helped me think and get my sentences right," wrote one child on his reflection. They preferred the web for organizing their thoughts about their vocabulary words. The children often asked if they might use it. Both are testimonials to the use of graphic organizers with students.

School C

To assess the helpfulness and effectiveness of graphic organizers in improving reading comprehension and vocabulary skills, the teacher/researcher utilized an observation checklist (Appendix E). The checklist included these skill areas: comparison/contrast, sequence, part/whole relationships, classification, analogies, and writing samples. Three notations over a period of 16 weeks were made for each student in each category of the organizer, once when no graphic organizer was used and twice with the intervention of a graphic organizer. Data are shown in percentages of students out 20 that either achieved (+) or did not achieve (**not yet**) mastery.

Table 16

Observation Checklist Results - School C

Targeted Comprehension Skills	Mastery	Start	1st Inter	2nd Inter
Comparison/Contrast	+	70	95	90
	not yet	30	5	10
Sequence	+	80	70	50
	not yet	20	30	50
Part/Whole	+	20	75	90
	not yet	80	25	10
Classification	+	30	50	50
	not yet	70	50	50
Analogies	+	55	55	45
	not yet	45	45	55
Writing Samples	+	90	80	95
	not yet	10	20	5

+ indicates mastery at 80% or above; **not yet** = students did not reach mastery; percentages = students out of 20

In the first comparison/contrast activity, the seventh-grade students of School C were directed to find similarities and differences in a group of 20 vocabulary words to be learned. Seventy percent demonstrated mastery. Eighty percent was considered mastery for all of the activities done as a part of this action research. Mastery levels on the second and third attempts were 95% and 90%. These last two activities were literature-based and proved more suitable for the intended task. In the second attempt two versions of a story were compared and contrasted with the use of the Venn Diagram (Appendix BBB), and in the third, two poems were similarly analyzed. Sixty-five percent of the students performed at mastery level on all three tries. They did indicate familiarity with the Venn diagram, which is perhaps one of the most widely-used graphic organizers at the elementary school level.

Eighty percent of the students in the targeted group showed mastery in the first sequencing activity, which involved ordering events in a story from memory without prior use of a graphic organizer. The second and third activities also required students to list events from a story in chronological order on a quiz, but the students had used the sequence chart (Appendix T) while studying story two and a ladder organizer (Appendix U) with story three. Although the students appeared to enjoy using these organizers and although the three stories were of similar length and difficulty, statistically, the students showed less mastery after using them. Seventy percent demonstrated mastery on the second try and 50% on the third. Twenty-five percent showed mastery on all three tries. It was encouraging to note that the two students who struggle most academically in this class eventually showed mastery on the third try.

For the first activity involving part/whole relationships, which involved the listing of terms dealing with a medieval theme in a story, 20% of the targeted group achieved mastery. The second activity dealt with characteristics of Alexander the Great being listed on an organizer called a scale (Appendix Z) and resulted in 75% mastery. The third activity, with 90%, asked the students to list elements of a theme on a web (Appendix AA). Fifteen percent demonstrated mastery on all three.

When first using the classification strategy to group vocabulary words, 30% showed mastery on the accompanying test. The fishbone organizer and mind maps (Appendices JJ & I) were used to classify words for two later vocabulary units, and the tested mastery levels were 50% on each, respectively. These vocabulary tests accompany the vocabulary program and are uniform in design and difficulty.

In the area of analogies, students were first given a group of analogies to complete. They were reminded of the relationships that one looks for in this type of activity, but used no graphic organizers to assist them. Fifty-five percent of the students demonstrated mastery. To complete the second and third analogy activities, students were asked to use first a flow chart and on the third a web (Appendix MM). Mastery levels were 55% on the second and 45% on the third. Thirty percent performed at mastery level all three times.

Test scores for three vocabulary units were also compared. No graphic organizer was used in conjunction with the study of the first. The fishbone and a mind map (Appendices JJ & I) were used for the other two. Mastery levels for these unit tests were 75%. 50%, and 50%, respectively.

Students at School C were administered a pretest and a post test for Vocabulary Units 1, 2, and 3. No graphic organizers were given to the students to aid in the learning of these 60 words.

Each unit contained 20 words. It seemed important to first introduce students to the format of this vocabulary program, which was unfamiliar to them. Comparison of review vocabulary tests for Units 1-3 and 4-6 revealed that 30% of the students tested improved their score. Five percent scored the same on the second test as compared to the first. Thirty percent of the students showed a greater margin of improvement between Units 4 and 6 after using the graphic organizers than between Units 1 and 3 (for which graphic organizers were not used).

Considerable attempt was made to minimize variables. Both the presentation of the lessons and the format of the test for each of the units were uniform. The students were, of course, more accustomed to the lesson and test formats by the sixth lesson, but it was felt by the teacher/researcher that some time was required to eliminate difficulties that might arise due to unfamiliarity.

Comparison of writing samples, both paragraphs and essays, showed mastery of the writing plan and revealed little difference in structure or inclusion of required elements. It was noticed by the teacher-researcher that one student used a mind map on his own initiative before being required to do so. The reason that little difference was shown may well be due to the fact that these junior high school students have had considerable previous experience in the use of graphic organizers in elementary school writing experience (Appendices CCC-EEE)

Written entries in the students' learning logs revealed an overall positive attitude toward the use of graphic organizers. Student entries in the logs included such comments as "I liked the fishbone because when you group the words, you learn easier, I think" and "The ladder helps you organize the main ideas in a story." Although statistics do not show high correlation between the use of graphic organizers and student achievement at School C, graphic organizers have been shown to be a helpful tool that can contribute to enhanced learning and foster a positive attitude toward learning tasks.

School D

At Site D the teacher observation checklist (Appendix F) was administered to the first graders testing abilities to compare/contrast, sequence, and to understand the concept of part/whole relationships. The categories of classification and analogy were not administered since the teacher/researcher felt these tasks were not appropriate for the abilities of these low-progress children who needed supplementary help. The data in Table 17 was obtained over a period of time from mid-September to mid-December. The data is shown in percentages out of five students achieving (+) or not achieving (**not yet**) mastery of 80% or better for each skill. On the ten-minute writing vocabulary task all of the students made gains. The number of words that were known and written increased at each time period, but scores were not included on the table as percentages. Table 17 follows.

Table 17

Observation Checklist Results - School D

Targeted Comprehension Skills	Mastery	Start	1st Inter	2nd Inter
Comparison/Contrast	+	40	60	60
	not yet	60	40	40
Sequence	+	40	60	100
	not yet	60	40	0
Part/Whole	+	80	80	100
	not yet	20	20	0

+ indicates mastery at 80% or above; **not yet** = students did not reach mastery; percentages of students out of 5 are reported

The first attempt to compare/contrast was an activity of children orally comparing and contrasting pictures. Forty percent of the students showed mastery on this attempt. On the second attempt a Venn Diagram (Appendix G) was utilized to compare story book characters to real life characters. Sixty percent of the students achieved mastery on the second attempt. On the third attempt the students also were instructed to use the Venn Diagram to describe likes and differences of story book characters. During this third activity 60% demonstrated mastery. The teacher/researcher believed that they lacked the background knowledge and ability to process these activities.

In the analysis of the ability to sequence, 40 percent of the students demonstrated understanding of the task on the first attempt. On the second attempt 60% of the students were able to accomplish the sequencing task of recording any sounds of which those of which they knew the letters, and placing them into correct boxes. They were not expected to have a beginning-to-end approach on this attempt. One hundred percent of the students showed mastery on the final attempt in which they were required to identify all of the sounds in sequence, while filling in the organizer boxes from beginning to end, from left to right (Appendix V).

For the understanding of part/whole relationships, 80% showed mastery on the first and second attempts. On the first attempt they were able to describe the main ideas and details in a story book that they constructed. On the second attempt the students were able to break words into parts using the target organizer (Appendix CC). During the final observation 100% of the targeted students showed mastery of part/whole relationships when they reassembled a cut-up sentence (Appendix DD) that was broken into language units.

Four of the six subtests administered earlier in the school year that were previously described in Chapter 2, page number 27, were administered again in early January (Clay, 1993). They include the letter identification test, the ten-minute writing vocabulary task, the hearing and recording sounds in words task (Appendices FFF & GGG), and the running records of text levels. All of the students who were identified in this research showed gains on all four subtests. At the beginning of the school year the text reading levels for the targeted students were all at a readiness basal level. During the January testing two of the students were at text levels three and four, which is equivalent to a pre-primer one basal reader. Two of the students were at text level five, which is equivalent to a pre-primer two basal reader, and one of the students was at a text level 14 which is equivalent to a basal grade one reader.

Conclusions and Recommendations

Students are aided in their understanding not by the amount of material they can memorize, but by the way they organize what they learn. Graphic organizers have helped the students improve their skills in the comparison and contrasting of information, sequencing of events, relating parts to wholes, classifying information, making analogies, and in their writing. Improved thinking skills of these students is evident in their use of organizational methods employed during activities. Many students, who realize the benefits, ask if they can organize their information, while taking a test, into a graphic organizer. Student writing is a necessary component of reading comprehension and vocabulary skills because it allows students to clarify their thoughts and express how much they understand. The data clearly show that many different kinds of graphic organizers have helped these students improve their reading comprehension and vocabulary skills.

An area that was not targeted in this study, but one which manifested itself, is that of socialization. Students showed a preference for designing their own graphic organizers and enjoyed sharing them in small-group activity, as opposed to individual study. The children often worked in groups to help each other learn, so not only did they learn to organize their thinking; they learned to help each other. As noted by James Bellanca and Robin Fogarty (1991), the blueprint for organizing student learning includes

> forming, cooperative learning groups, developing trust during the norming phase, building self-concept and self-esteem through the forming phase, and learning strategies for coping with the conflict of the storming phase, higher-order thinking functions smoothly in the performing stage and the cycle is reignited each time new groups are formed. (p. 260)

The data that were obtained from this study showed a positive outcome. Favorable comments were made by students at all levels. The use of these organizers has made an overall improvement in the students' performance. At the primary levels, it was important to keep the organizers simple. More detailed organizers were implemented with older students. When students' thinking skills are organized, improved reading comprehension and writing abilities follow.

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APPENDICES

Appendix A
PARENT READING SURVEY

1. My child likes to read books:
   - ☐ Never
   - ☐ Not very often
   - ☐ Sometimes
   - ☐ Often
2. My child sees adults reading in our home. . .
   - ☐ Never
   - ☐ Not very often
   - ☐ Sometimes
   - ☐ Often
3. For my child, reading is. . . .
   - ☐ Very hard
   - ☐ Kind of hard
   - ☐ Kind of easy
   - ☐ Very easy
4. When reading if he/she doesn't know a word, my child can. . .
   - ☐ Never figure it out
   - ☐ Almost never figure it out
   - ☐ Sometimes figure it out
   - ☐ Almost always figure it out
5. My child likes it when I read a book out loud with him/her. . . .
   - ☐ Never
   - ☐ Once in a while
   - ☐ Almost every day
   - ☐ Every day
6. I think my child is a . . . .
   - ☐ A poor reader
   - ☐ An OK reader
   - ☐ A good reader
   - ☐ A very good reader
7. My child thinks libraries are. . . .
   - ☐ A boring place to spend time
   - ☐ An OK place to spend time
   - ☐ An interesting place to spend time
   - ☐ A neat place to spend time
8. When my child reads alone, he/she understands . . .
   - ☐ None of what is read
   - ☐ Almost none of what is read
   - ☐ Some of what is read
   - ☐ Almost everything that is read
9. I can describe my child's TV time (include programs and games) this way. . .
   - ☐ Watches more than 4 programs most days
   - ☐ Watches 3 or 4 programs most days
   - ☐ Watches 1 or 2 programs most days
   - ☐ Hardly ever watches TV
10. My child thinks reading is . . . .
    - ☐ A boring way to spend time
    - ☐ An OK way to spend time
    - ☐ An interesting way to spend time
    - ☐ A great way to spend time

Appendix B
STUDENT READING SURVEY

1. I like to read books:
   - ☐ Never
   - ☐ Not very often
   - ☐ Sometimes
   - ☐ Often
2. I see adults reading in my home. . .
   - ☐ Never
   - ☐ Not very often
   - ☐ Sometimes
   - ☐ Often
3. Reading is. . . .
   - ☐ Very hard for me
   - ☐ Kind of hard for me
   - ☐ Kind of easy for me
   - ☐ Very easy for me
4. When I am reading, if I don't know a word, I can. . .
   - ☐ Never figure it out
   - ☐ Almost never figure it out
   - ☐ Sometimes figure it out
   - ☐ Almost always figure it out
5. I like it when my teacher reads out loud to the class. . . .
   - ☐ Never
   - ☐ Once in a while
   - ☐ Almost every day
   - ☐ Every day
6. I think I am a . . . .
   - ☐ A poor reader
   - ☐ An OK reader
   - ☐ A good reader
   - ☐ A very good reader
7. Libraries are. . . .
   - ☐ A boring place to spend time
   - ☐ An OK place to spend time
   - ☐ An interesting place to spend time
   - ☐ A neat place to spend time
8. When I have to read something by myself, I understand . . .
   - ☐ None of what I read
   - ☐ Almost none of what I read
   - ☐ Some of what I read
   - ☐ Almost everything I read
9. I can describe my TV time (include programs and games) this way. . .
   - ☐ I watch more than 4 programs most days
   - ☐ I watch 3 or 4 programs most days
   - ☐ I watch 1 or 2 programs most days
   - ☐ I hardly ever watch TV
10. I think reading is . . . .
    - ☐ A boring way to spend time
    - ☐ An OK way to spend time
    - ☐ An interesting way to spend time
    - ☐ A great way to spend time

Appendix C
School A

TEACHER INFORMAL OBSERVATION CHECKLIST School A

1 - Shows mastery of skill 0 - Does not show mastery

St	**Compare/Contrast**				**Sequence**				**Part/Whole**				**Classification**				**Analogy**				**Writing Samples**			
	Start	1st	2nd	3rd	Start	1st	2nd	3rd	Start	1st	2nd	3rd	Start	1st	2nd	3rd	Start	1st	2nd	3rd	Start	1st	2nd	3rd
A	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1
B	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C	0	0	0	1	0	0	1	0	0	0	1	1	0	0	1	1	0	0	1	0	0	1	1	1
D	na	0	0	1	0	0	0	0	0	1	na	1	0	0	1	1	0	1	0	0	1	na	1	1
E	0	1	1	1	0	1	1	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1
F	0	1	0	1	0	1	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	0
G	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1
H	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	1
I	0	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1
J	1	1	1	na	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
K	0	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	0	1	1	1
L	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
M	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1
N	0	1	0	1	1	1	0	1	0	1	1	1	1	1	1	0	0	1	0	0	1	1	1	1
O	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1
Q	0	1	1	1	0	1	0	1	0	0	1	1	1	1	1	0	0	0	1	1	1	1	1	1
R	0	0	1	1	0	1	0	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0
S	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1
T	0	0	0	1	0	1	0	0	0	1	1	0	1	0	1	1	0	1	1	1	0	1	1	1
Percentage of students achieving mastery of 80% or better shown below																								
	25	75	60	95	55	85	75	70	55	90	95	90	80	75	100	80	35	90	80	60	85	95	100	90

St - Student; 1st - intervention 9/15; 2nd - intervention 10/30; 3rd - intervention 12/15

TEACHER INFORMAL OBSERVATION CHECKLIST School B

1 - Shows mastery of skill 0 - Does not show mastery

Student	**Compare/Contrast**			**Sequence**			**Part/Whole - Vocab.**			**Part/Whole - Compr.**			**Analogy**			**Writing Samples**		
	Start	10/30	12/15	Start	10/30	12/15	Start	11/23	01/29	Start	11/23	01/29	Start	10/30	12/15	Start	10/30	12/15
A	1	1	1	1	1	1	1	1	1	0	0	1				1	1	1
B	0	1	1	0	1	1	1	1	1	0	1	1				1	1	1
C	1	1	1	1	1	1	1	1	1	1	0	1				1	1	1
D	0	1	1	1	1	1	1	1	1	1	1	1				1	1	1
E	1	1	1	1	1	1	1	1	1	1	1	1				1	1	1
F	1	1	1	0	0	0	0	1	1	0	0	1				0	1	1
G	1	1	1	1	1	1	1	1	1	1	0	1				0	1	1
H	1	1	1	1	1	1	0	1	1	0	1	1				0	0	0
I	1	1	1	1	1	1	1	1	1	1	1	1				1	1	1
J	1	1	1	1	0	1	0	1	1	0	0	1				0	0	1
K	0	0	1	1	0	1	0	0	0	0	1	0				0	0	1
L	0	1	1	1	1	1	1	1	1	0	0	1				1	1	1
M	0	0	0	0	0	1	1	1	1	0	0	1				0	0	0
N	1	0	0	1	0	1	0	1	1	0	1	1				0	0	1
O	1	1	1	1	1	1	1	1	1	1	1	1				1	1	1
P	1	1	1	0	1	1	1	1	1	1	1	1				1	1	1
Q	0	1	1	0	1	1	1	1	1	0	0	1				0	0	1
R	0	1	1	1	1	1	0	0	1	0	1	1				1	0	1
Percentage of students out of 18 achieving mastery of 80% or better shown below																		
	61	87	89	72	72	94	67	89	94	39	56	94				56	61	89

Start - beginning data 9/15; 10/30 - 1st intervention; 12/15 - 2nd intervention / Part/Whole Relationships was divided into Vocabulary and Comprehension / Classification and Analogy were not done

Appendix E
School C

TEACHER INFORMAL OBSERVATION CHECKLIST School C

1 - Shows mastery of skill 0 - Does not show mastery

Student	Compare/Contrast			Sequence			Part/Whole			Classification			Analogy			Writing Samples		
	Start	10/30	12/15	Start	10/30	12/15	12/30	10/30	12/15	Start	10/30	12/15	Start	10/30	12/15	Start	10/30	12/15
A	1	1	1	0	1	1	1	0	1	0	0	0	0	0	0	1	na	1
B	0	1	1	1	1	0	1	1	1	0	0	0	1	1	0	1	na	na
C	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1
D	1	1	1	1	0	1	0	0	1	1	0	1	0	0	0	1	1	1
E	1	1	1	1	1	1	0	1	1	0	0	1	1	1	0	1	1	1
F	1	1	1	1	1	0	0	1	1	1	1	0	0	0	0	1	1	1
G	1	1	1	1	1	0	0	1	1	1	0	1	1	1	1	1	na	1
H	0	1	0	1	1	0	0	1	1	0	1	1	0	1	1	1	1	1
I	0	1	1	1	1	0	0	1	1	0	1	0	0	0	0	1	1	1
J	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1
K	0	1	1	1	0	1	0	1	1	0	0	1	1	1	0	1	1	1
L	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
M	1	1	1	0	0	0	0	1	1	0	0	0	1	0	1	1	1	1
N	1	1	1	1	1	1	0	1	1	0	0	1	0	0	0	0	1	1
O	1	1	1	1	1	0	1	1	1	0	0	0	1	1	1	1	1	1
P	1	1	1	1	1	1	1	0	1	0	0	0	1	1	0	1	1	1
Q	0	1	1	1	0	0	0	1	1	0	1	1	1	1	1	1	na	1
R	1	1	1	1	1	0	0	0	1	1	1	0	0	0	0	1	1	1
S	1	1	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1
T	1	0	1	1	1	1	0	1	1	0	0	1	1	1	1	1	1	1
Percentage of students achieving mastery of 80% or better shown below																		
	70	95	90	80	70	50	20	75	90	30	35	50	55	55	45	90	80	95

Start - beginning data 9/15; 10/30 - 1st intervention; 12/15 - 2nd intervention

Appendix F
School D

TEACHER INFORMAL OBSERVATION CHECKLIST   School D

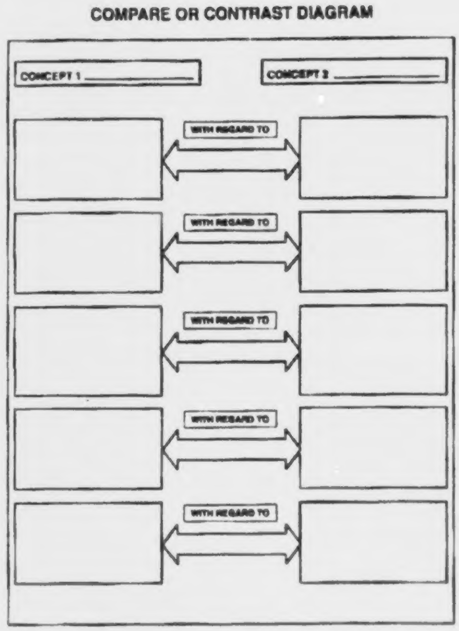
1 - Shows mastery of skill   0 - Does not show mastery

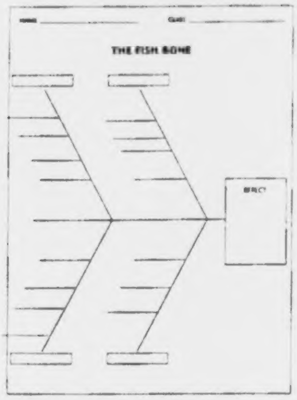
Student	Compare/Contrast			Sequence			Part/Whole			Classification			Analogy			Writing Samples		
	Start	10/30	12/15	Start	10/30	12/15	Start	10/30	12/15	Start	10/30	12/15	Start	10/30	12/15	Start	10/30	12/15
A	0	1	1	0	1	1	0	1	1							2	10	15
B	1	1	1	1	1	1	1	1	1							2	36	46
C	1	1	1	0	0	1	1	1	1							8	21	27
D	0	0	0	0	0	1	1	0	1							3	10	17
E	0	0	0	1	1	1	1	1	1							4	17	17
Percentage of students achieving mastery of 80% or better shown below																		
	40	60	60	20	60	100	80	80	100									

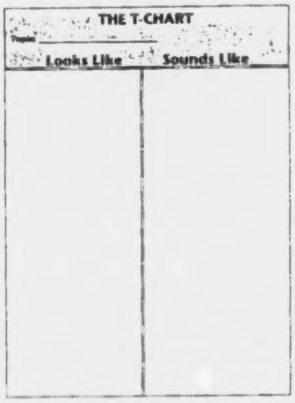
Start - beginning data 9/15; 10/30 - 1st intervention; 12/15 - 2nd intervention / Writing Sample scores are number of words student was able to write

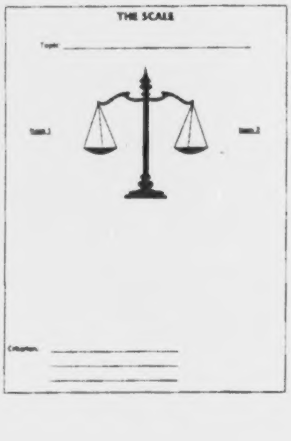
Classification and Analogy were not done

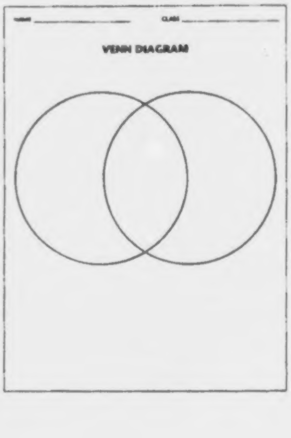
Appendix G
Graphic Organizers

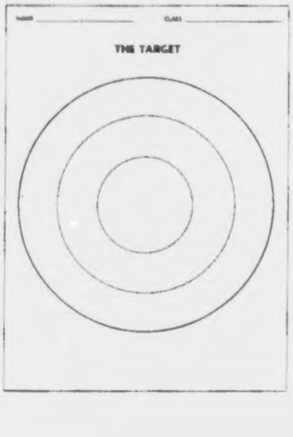

COMPARE OR CONTRAST DIAGRAM
CONCEPT 1
CONCEPT 2
WITH REGARD TO
WITH REGARD TO
WITH REGARD TO
WITH REGARD TO
WITH REGARD TO


NAME
CLASS
THE FISH BONE
EFFECT


THE T-CHART
Topic
Looks Like
Sounds Like

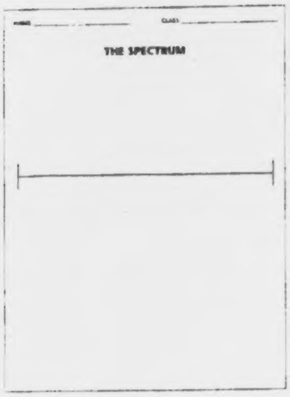

THE SCALE
Topic
Topic 1
Topic 2
Criterion


NAME
CLASS
VENN DIAGRAM

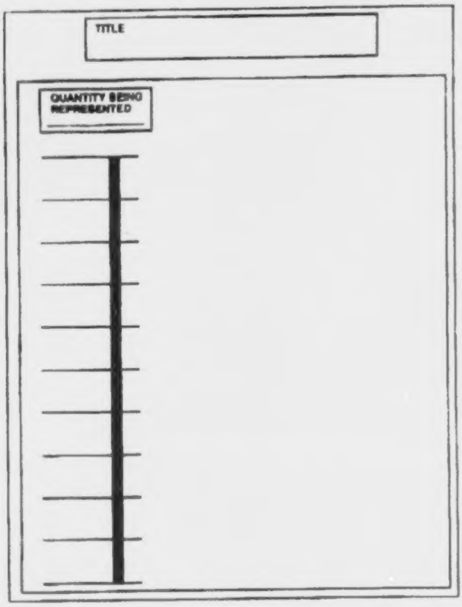

NAME
CLASS
THE TARGET

BEST COPY AVAILABLE

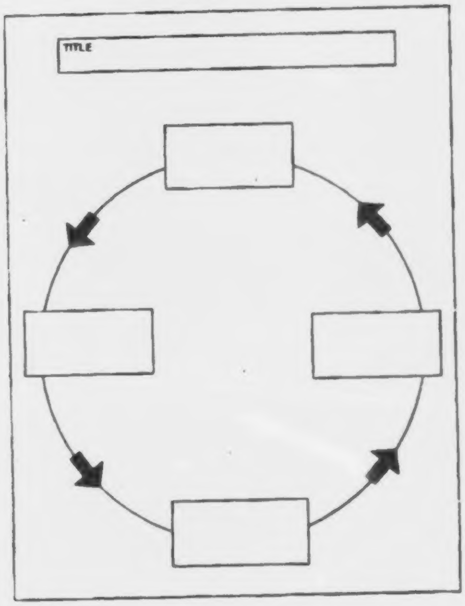
Appendix H
Graphic Organizers

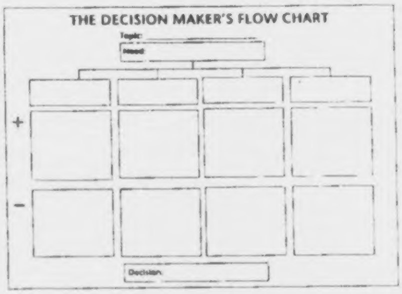

NAME
CLASS
THE SPECTRUM

TIME LINE INTERVAL GRAPH


TITLE
QUANTITY BEING REPRESENTED

CYCLE GRAPH

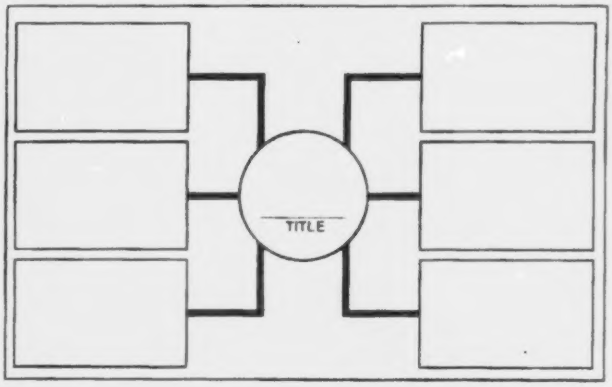


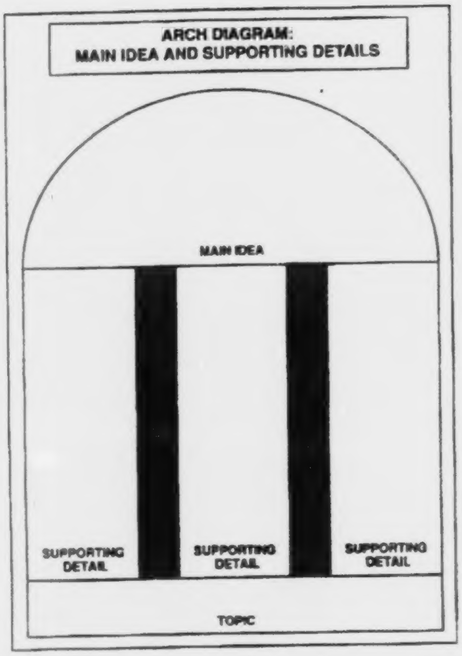

THE DECISION MAKER'S FLOW CHART
Topic:
Need:
+
–
Decision:

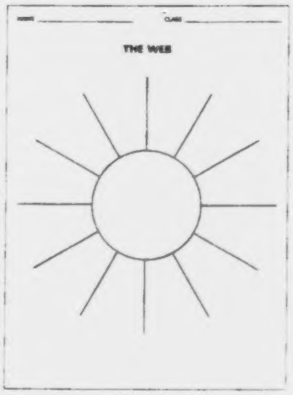
BEST COPY AVAILABLE

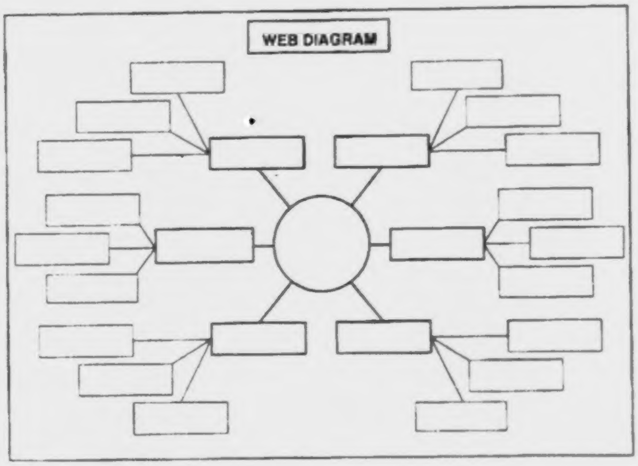
Appendix I
Graphic Organizers

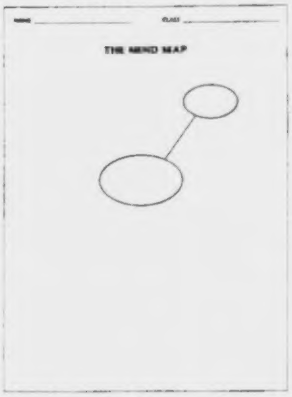
CENTRAL IDEA GRAPHS




ARCH DIAGRAM:
MAIN IDEA AND SUPPORTING DETAILS
MAIN IDEA
SUPPORTING DETAIL
SUPPORTING DETAIL
SUPPORTING DETAIL
TOPIC


NAME
CLASS
THE WEB


WEB DIAGRAM


NAME
CLASS
THE MIND MAP

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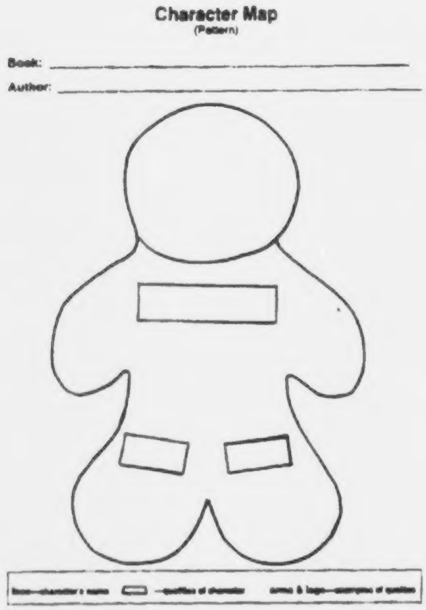
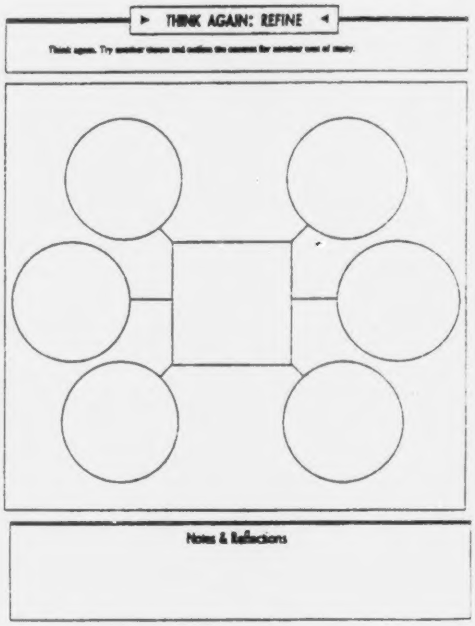
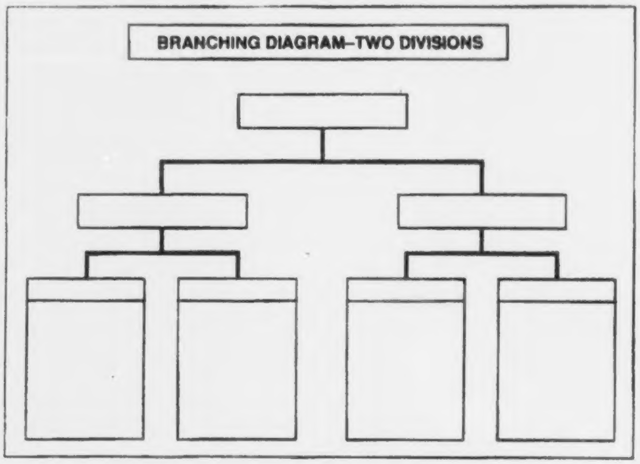
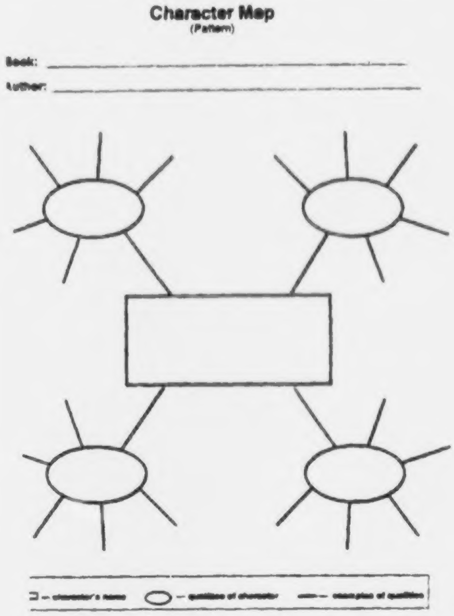
Appendix J
Graphic Organizers


Character Map
(Pattern)
Book:
Author:

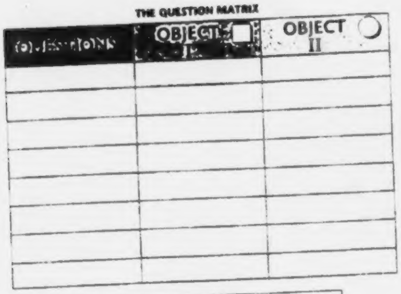

THINK AGAIN: REFINE
Notes & Reflections

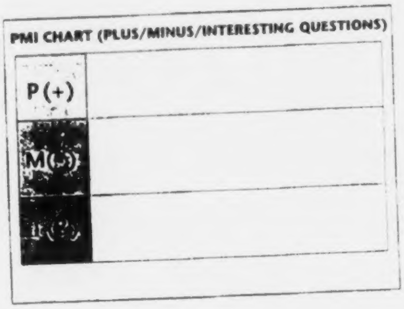

BRANCHING DIAGRAM–TWO DIVISIONS

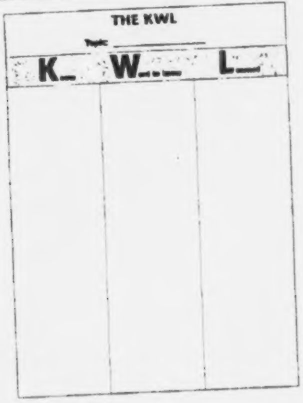

Character Map
(Pattern)
Book:
Author:

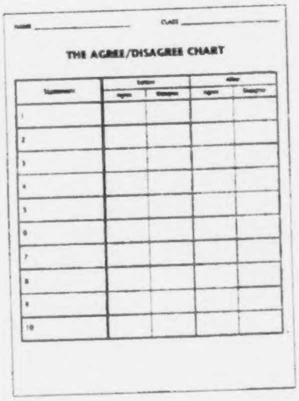
BEST COPY AVAILABLE

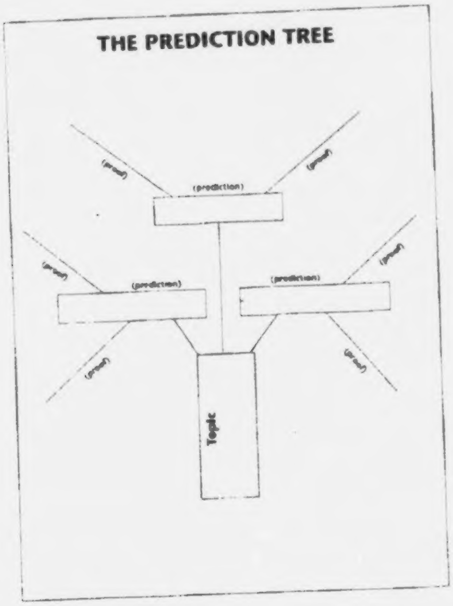
Appendix K
Graphic Organizers

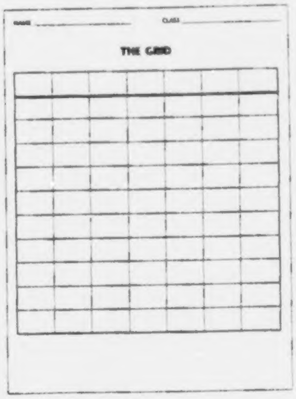

THE QUESTION MATRIX
QUESTIONS
OBJECT I
OBJECT II


PMI CHART (PLUS/MINUS/INTERESTING QUESTIONS)
P(+)
M(-)
I(?)


THE KWL
Topic
K
W
L


NAME
CLASS
THE AGREE/DISAGREE CHART
1
2
3
4
5
6
7
8
9
10


THE PREDICTION TREE
(proof)
(proof)
(prediction)
(proof)
(proof)
(prediction)
(prediction)
(proof)
(proof)
Topic


NAME
CLASS
THE GRID

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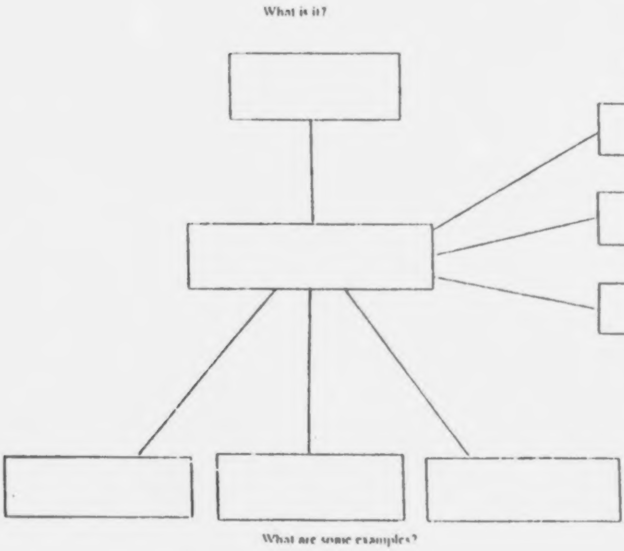
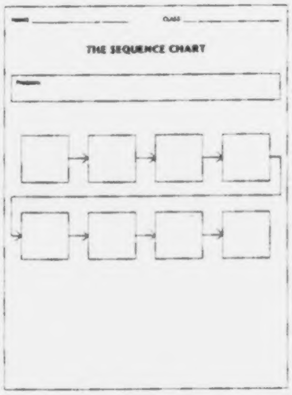
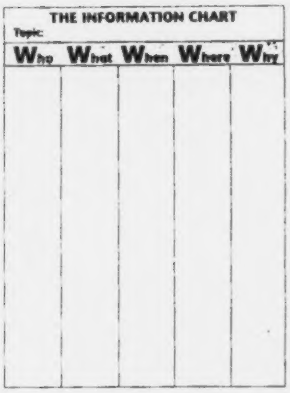
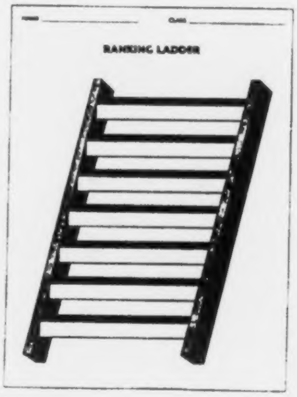
Appendix L
Graphic Organizers

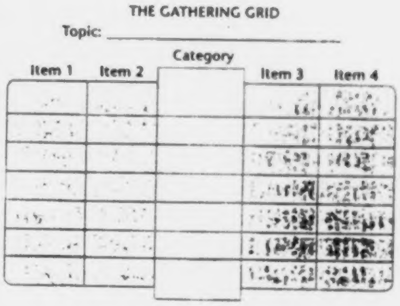
WORD MAP


What is it?
What is it like?
What are some examples?


NAME
CLASS
THE SEQUENCE CHART


THE INFORMATION CHART
Topic:
Who
What
When
Where
Why


NAME
CLASS
RANKING LADDER


THE GATHERING GRID
Topic:
Category
Item 1
Item 2
Item 3
Item 4

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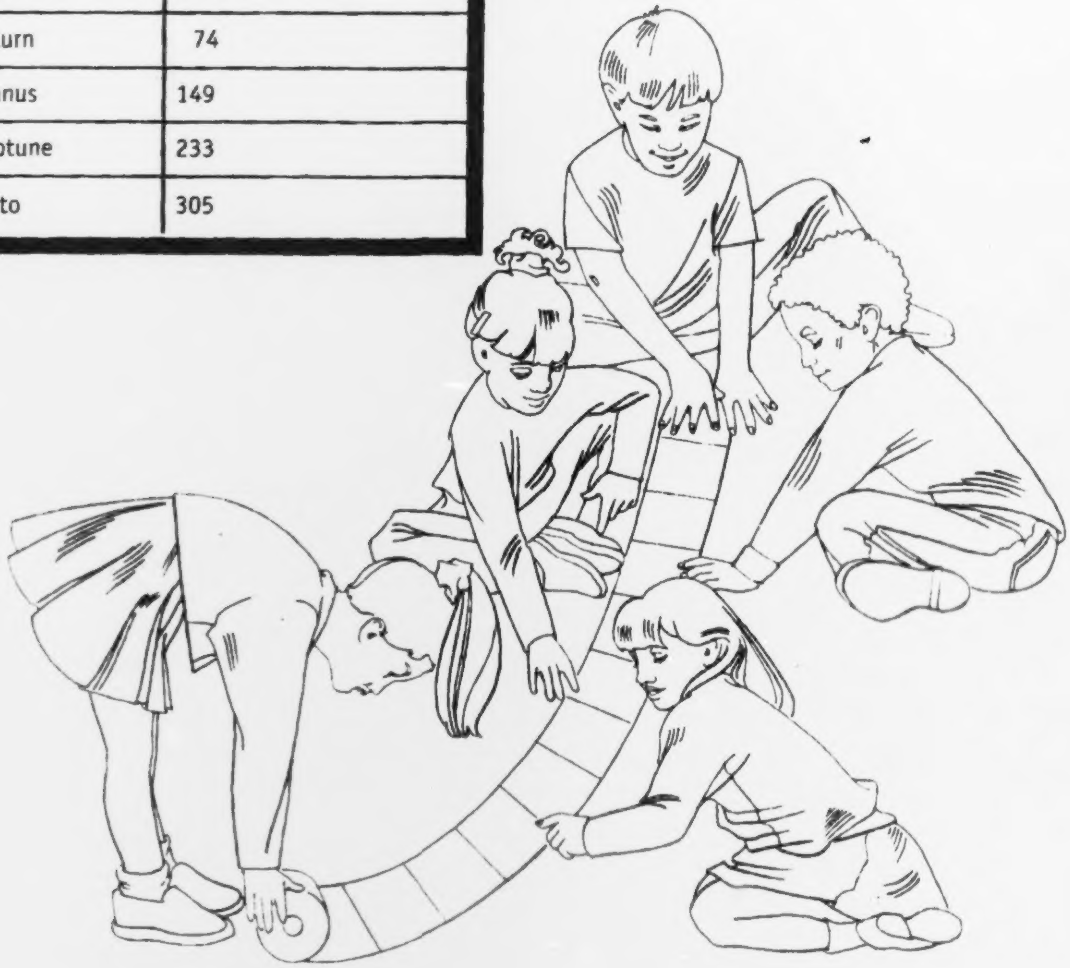
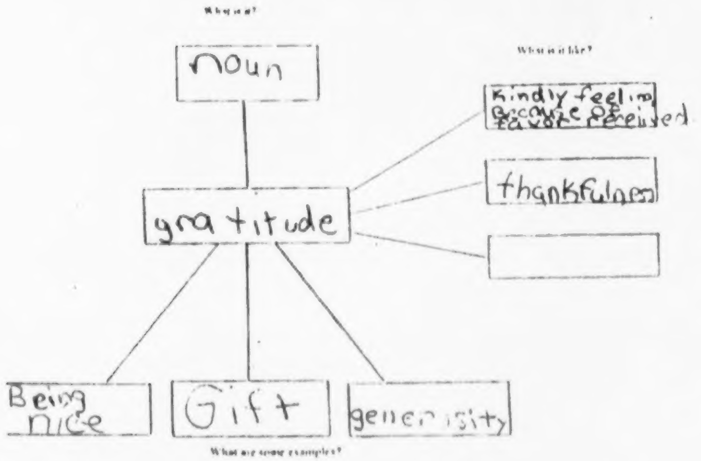
Name ______________________________ Date ______________

TABLE OF PLANET DISTANCES

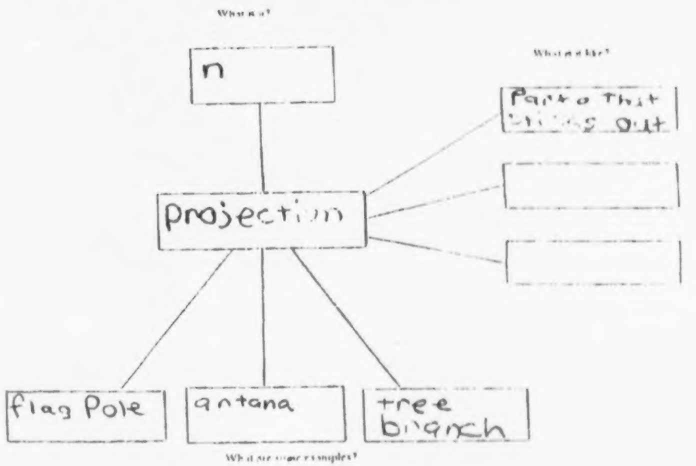
Planet	Sheet Number
Mercury	3
Venus	between 5 and 6
Earth	between 7 and 8
Mars	between 11 and 12
Jupiter	40
Saturn	74
Uranus	149
Neptune	233
Pluto	305



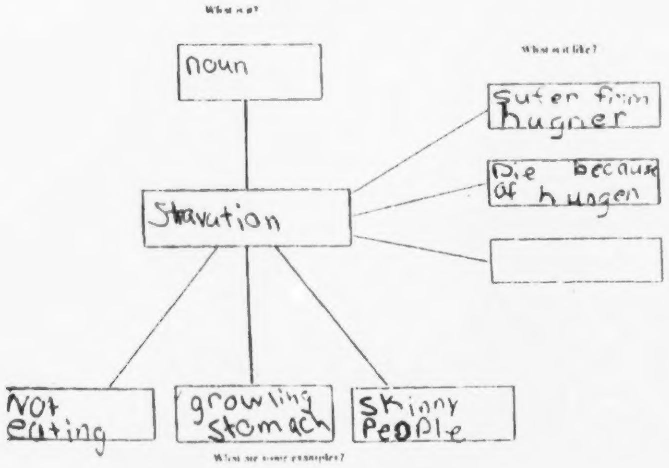
WORD MAP


What is it?
noun
What is it like?
Kindly feeling because of favor received
thankfulness
gratitude
Being nice
Gift
genenisity
What are some examples?

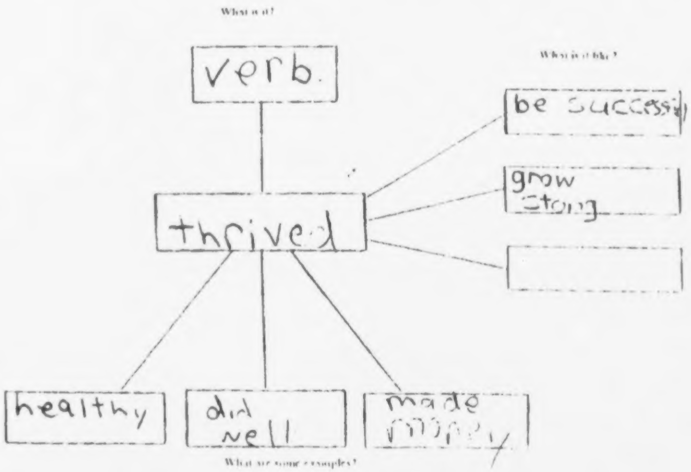
WORD MAP


What is it?
n
What is it like?
Part o That sticks out
projection
flag Pole
antana
tree branch
What are some examples?

WORD MAP


What is it?
noun
What is it like?
Sufer from hugner
Die because of hugen
Stavation
Not eating
growling stomach
Skinny People
What are some examples?

WORD MAP

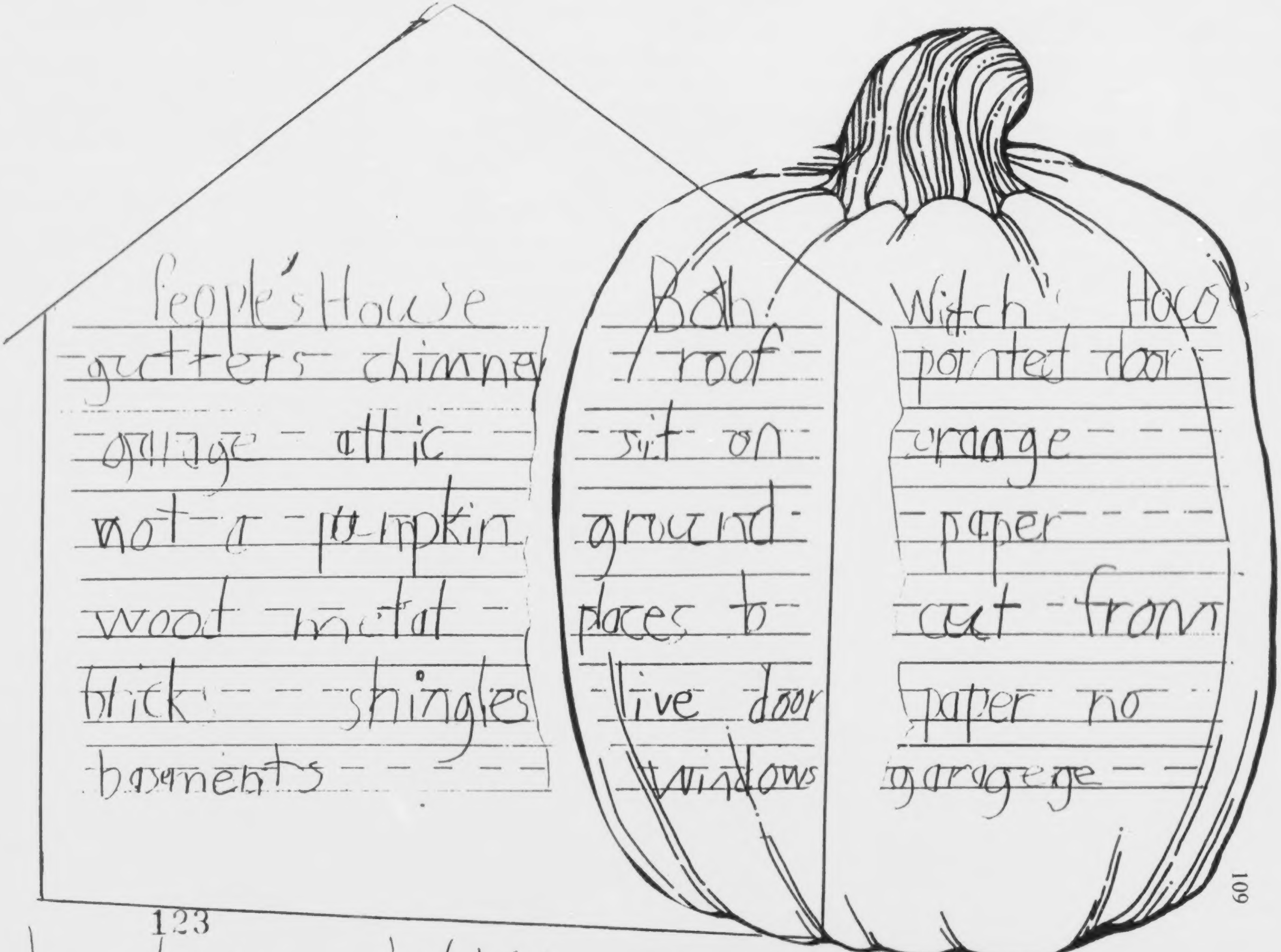

What is it?
verb.
What is it like?
be successful
grow Stong
thrived
healthy
did well
made money
What are some examples?

Appendix O
Compare/Contrast

COMPARE OR CONTRAST DIAGRAM

Miss Nelson Is Missing

CONCEPT 1 Miss Nelson	WITH REGARD TO	CONCEPT 2 Miss Swamp
	Physical Description	
	Personality	
	Control of Class	
	Actions of Students	
	Outcome	



People's House	Both	Witch's House
gutters chimney	roof	pointed door
garage attic	sit on	orange
not a pumpkin	ground	paper
wood metal	places to	cut from
brick shingles	live door	paper no
basements	windows	garagege

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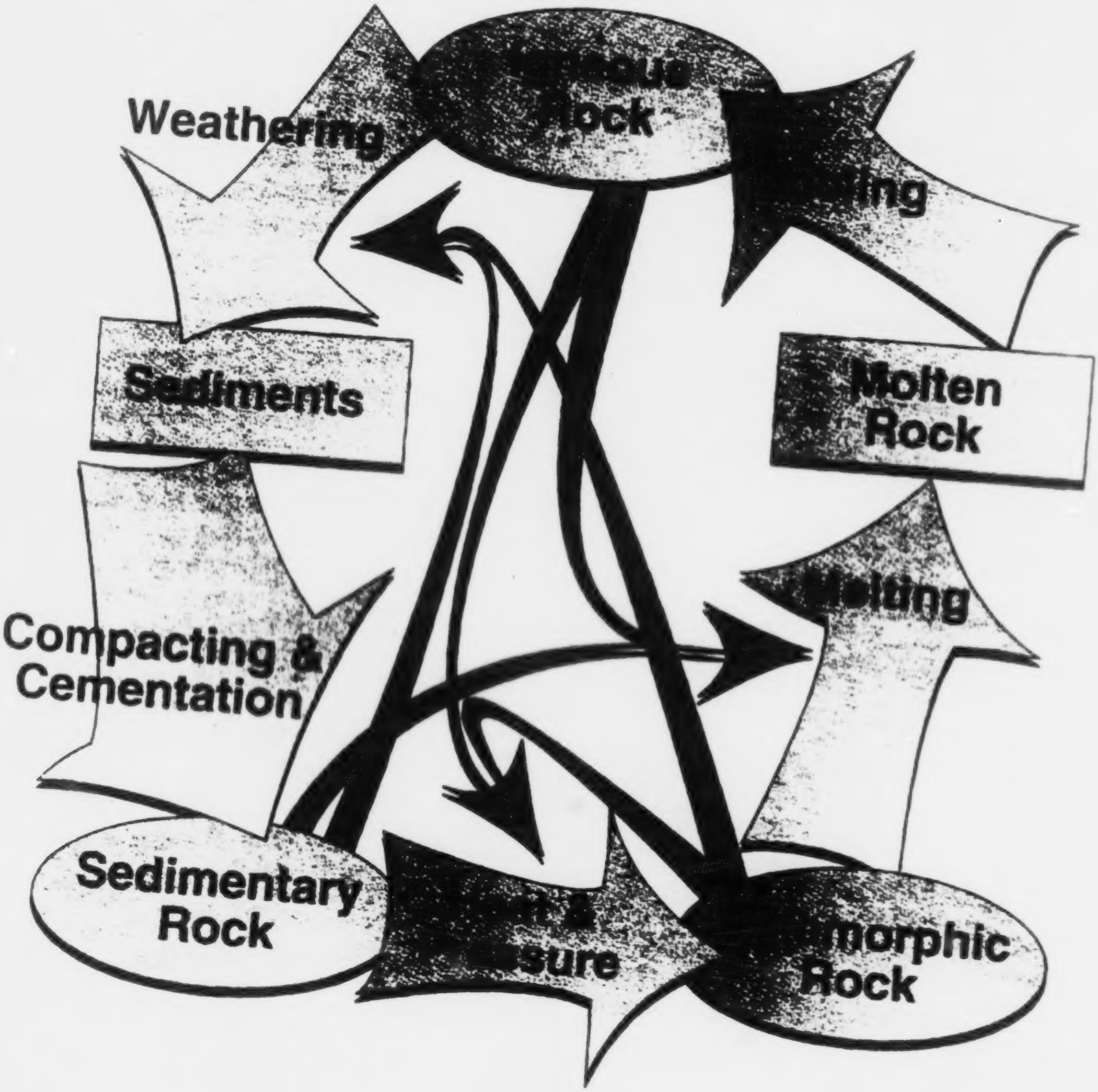
Appendix Q
Rock Cycle

Name ______________________________ Date ____________________

ROCK CYCLE


Igneous Rock
Weathering
Cooling
Sediments
Molten Rock
Melting
Compacting & Cementation
Sedimentary Rock
Heat & Pressure
Metamorphic Rock

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Mikey

Story Map

(Pattern)

Title: March, April, May

A

Setting School

Main Character Shrly

Problem or Goal
Problem is ~~f~~that shes geting bat up
Goal Being a good enbasedor

Events Shrly making new frinds.
Learning 5th grade Level.
Meats a not very good
frend. And Learns
thers no mean pole,

Ending Shes still Learning.

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Appendix S
Time Line

Changes

As we follow Shirley Temple Wong through her first year in America, she goes through many changes as a result of the events and experiences she encounters. For each month of the year describe one event that occurs and explain how it affects Shirley.

January Event: ____________ Effect: ____________	*July* Event: ____________ Effect: ____________
February Event: ____________ Effect: ____________	*August* Event: ____________ Effect: ____________
March Event: ____________ Effect: ____________	*September* Event: ____________ Effect: ____________
April Event: ____________ Effect: ____________	*October* Event: ____________ Effect: ____________
May Event: ____________ Effect: ____________	*November* Event: ____________ Effect: ____________
June Event: ____________ Effect: ____________	*December* Event: ____________ Effect: ____________

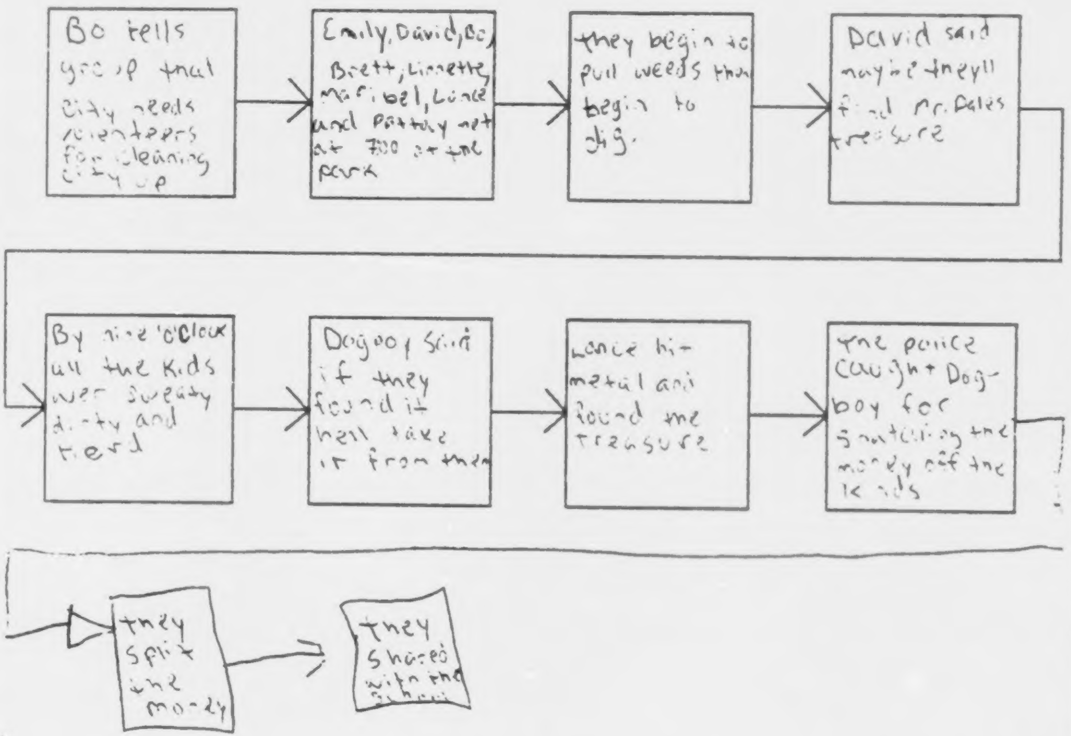
Appendix T
Sequence Chart

NAME Karina

CLASS English 4th period

THE SEQUENCE CHART

Problem: The sequence of events of "The Hidden Treasure"



Bo tells group that city needs volunteers for cleaning city up

Emily, David, Bo, Brett, Linnette, Maribel, Lance and Patsy met at 700 at the park

they begin to pull weeds then begin to dig.

David said maybe they'll find Mr. Fales treasure

By nine 'o'Clock all the Kids wer sweaty dirty and tired

Dogboy said if they found it hell take it from them

Lance hit metal and found the treasure

The police caught Dog-boy for snatching the money off the kids

they split the money

they shared with the [illegible]

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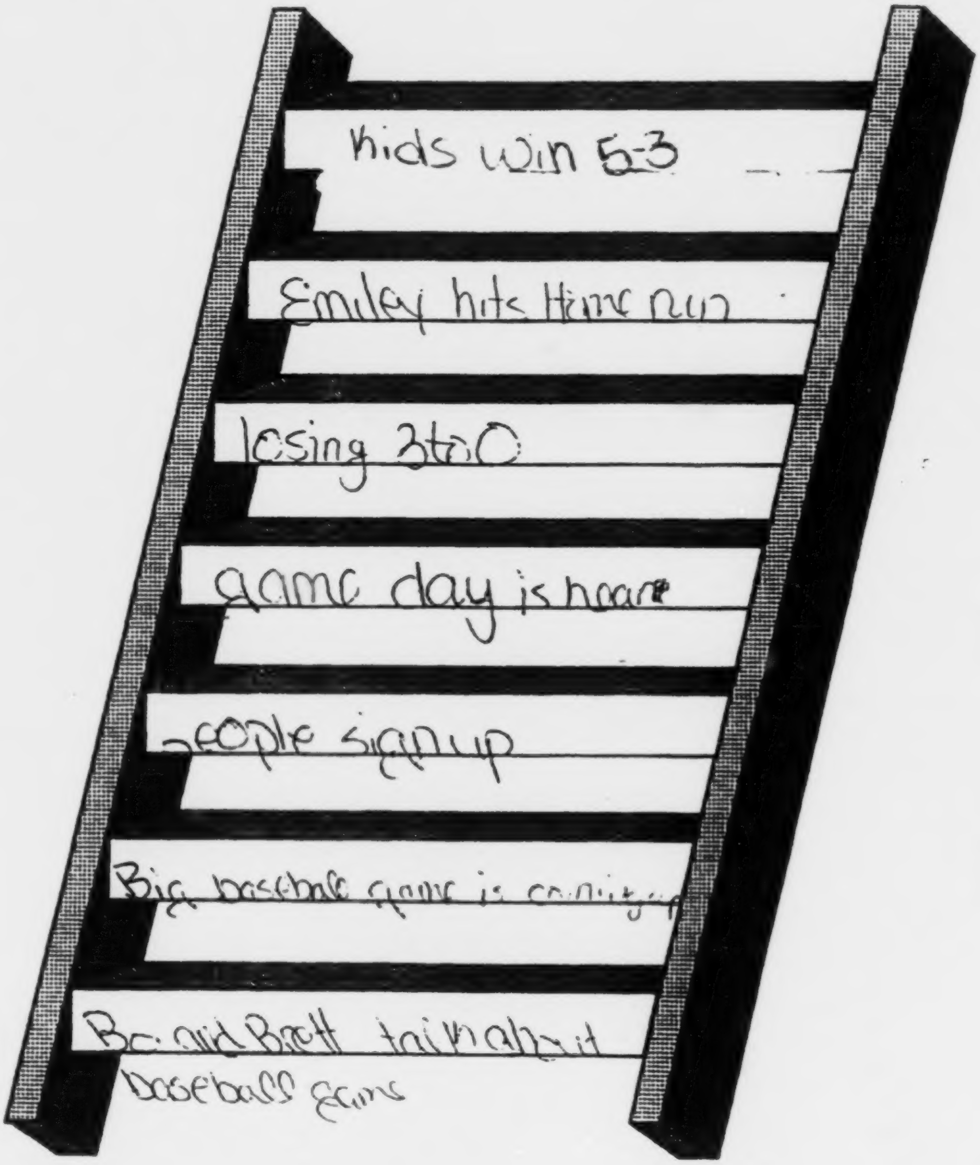
Appendix U
Ranking Ladder

NAME Judy

CLASS Hr 4 11-16-98

RANKING LADDER



kids win 5-3

Emiley hits Home run

losing 3 to 0

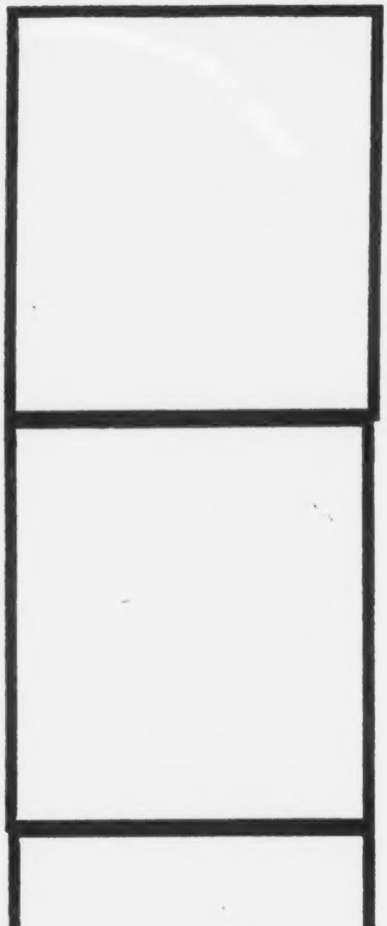
game day is hear

people signup

Big baseball game is coming up

Bo and Brett talk about baseball game

Appendix V
Sound Boxes



Appendix W
Organizer Boxes

the

the

h o m e

w i sh s

the w i Sh S T a y

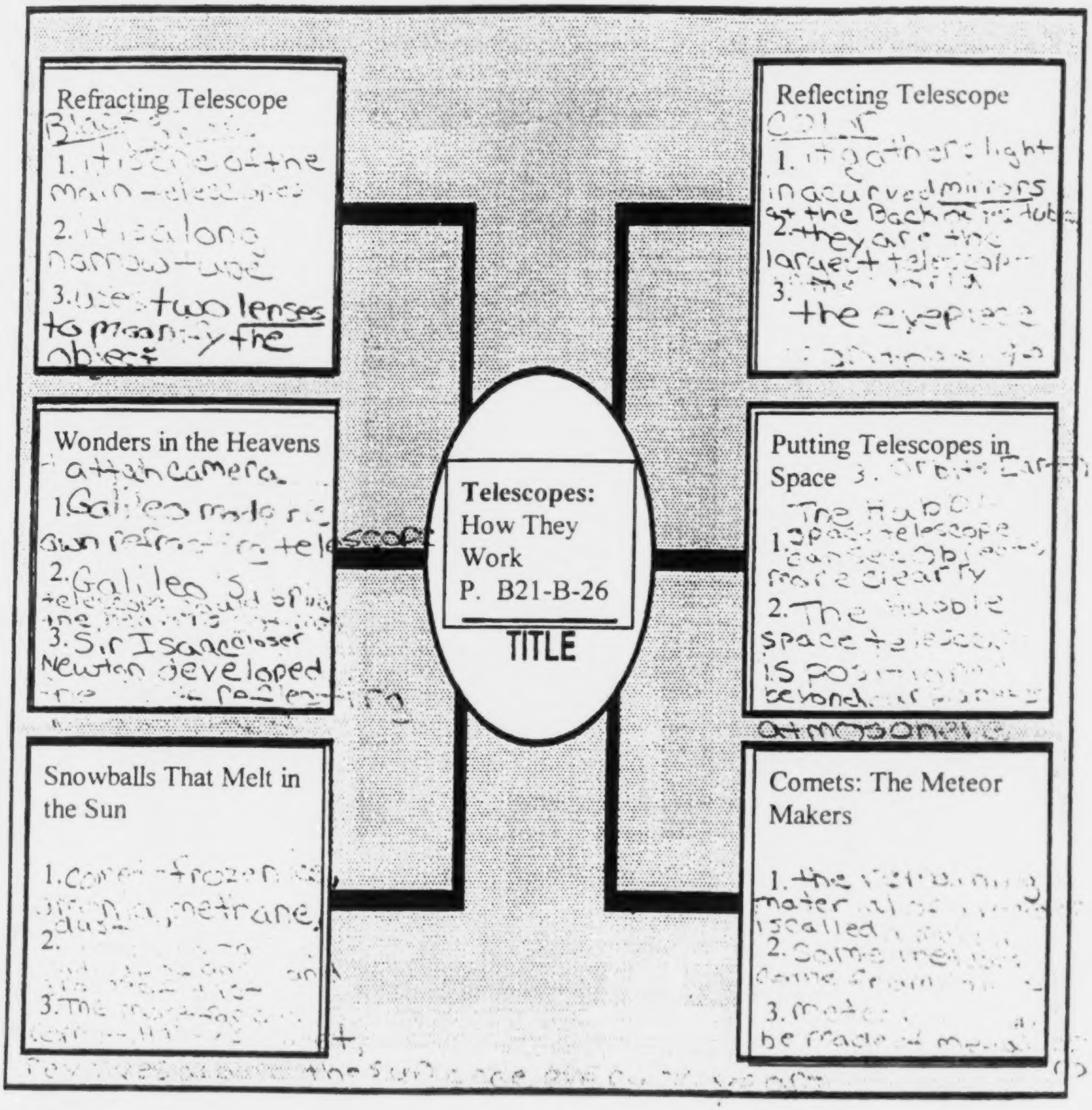
the

I wish
I want to STay
home.

Appendix X
Central Idea Graph

[illegible]

CENTRAL IDEA GRAPHS



Refracting Telescope
Black [illegible]
1. it is one of the main telescopes
2. it is a long narrow tube
3. uses two lenses to magnify the object

Reflecting Telescope
[illegible]
1. it gathers light in a curved mirrors at the Back of the tube
2. they are the largest telescopes [illegible]
3. the eyepiece [illegible]

Wonders in the Heavens
attach camera
1. Galileo made his own refracting telescope
2. Galileo's telescope [illegible]
3. Sir Isaac closer Newton developed the [illegible] reflecting

Telescopes: How They Work
P. B21-B-26
TITLE

Putting Telescopes in Space 3. orbits Earth
The Hubble
1. space telescope can see objects more clearly
2. The Hubble space telescope is positioned beyond our [illegible] atmosphere

Snowballs That Melt in the Sun
1. comet - frozen [illegible], methane, dust
2. [illegible]
3. The [illegible]
[illegible] the Sun [illegible]

Comets: The Meteor Makers
1. the [illegible] material [illegible] is called [illegible]
2. Some meteors come from [illegible]
3. meteors [illegible] be made of metal

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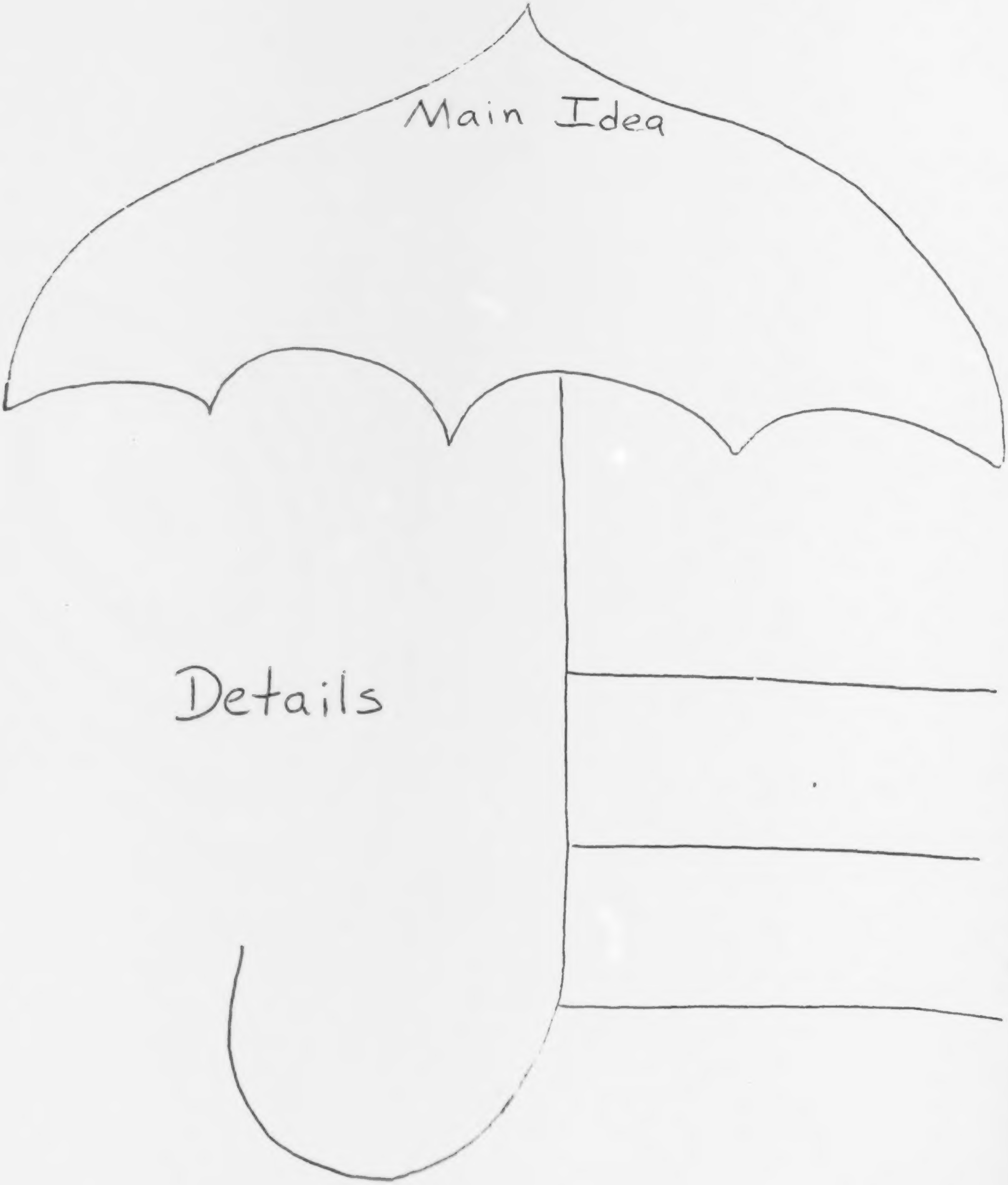
Appendix Y
Umbrella Diagram


Main Idea
Details

THE SCALE

jenyl

Topic: Alexander the Great

characteristics

Item 1

didn't like his father

short

wanted everything for himself

bad temper

liked his mom

read Greek books

wore Persian clothes

accomplishments

Item 2

helped defeat Greece

excellent solider

took army → Persia

lord of Asia

married [illegible] daughter

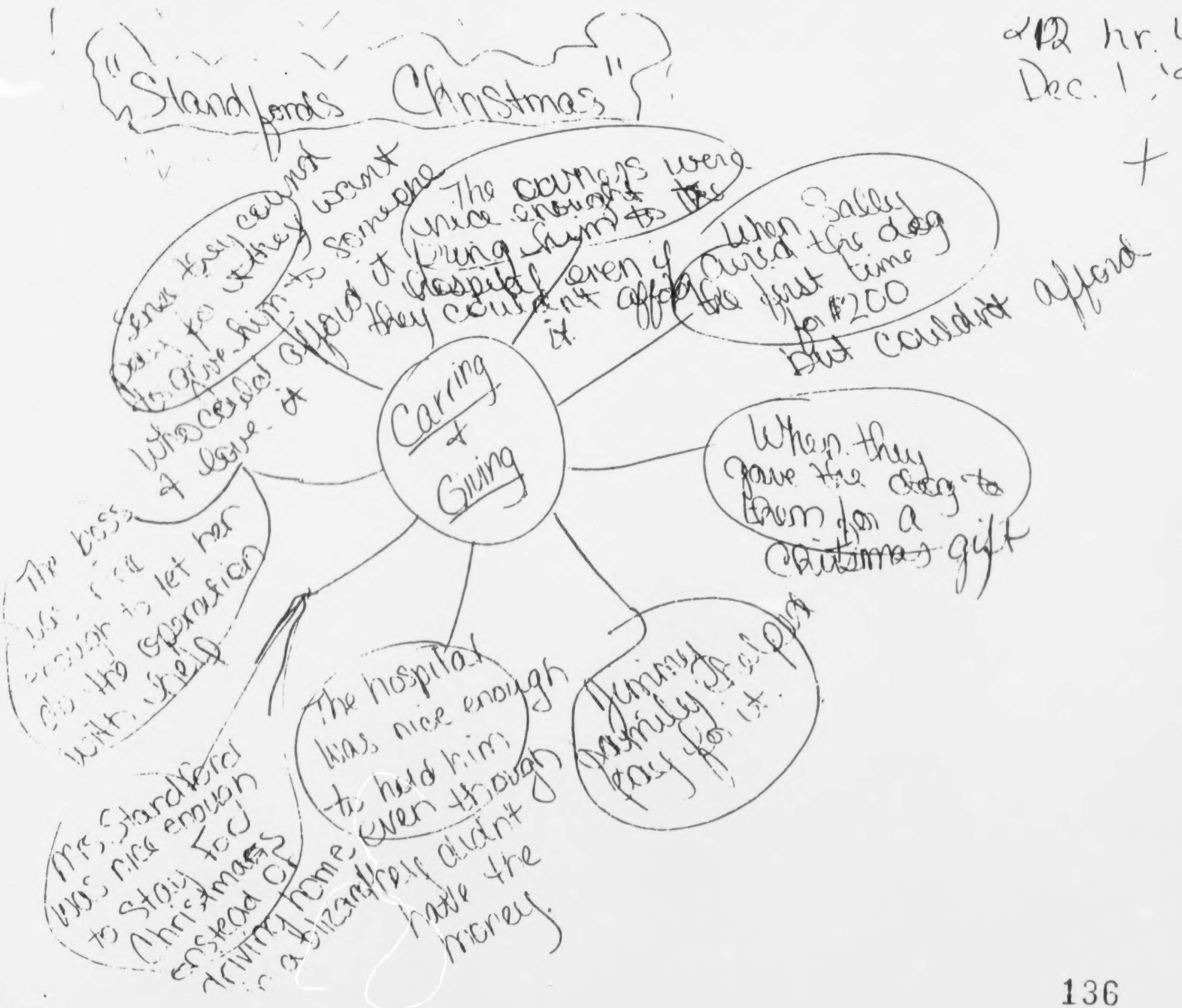
conquered Egypt

named a city after himself

[illegible] still

Criterion: ______________________

2P2 hr. 4
Dec. 1, '98



"Standfords Christmas"

Carring & Giving

Sence they cannot pay for it they want to give him to someone whocould afford it & love it

The owners were nice enough to bring him to the hospital even if they couldn't afford it.

When Salley cured the dog the first time for $200 but couldn't afford

When they gave the dog to them for a Christmas gift

Jimmy family helped pay for it.

The hospital was nice enough to hold him even though they didn't have the money.

Mr. Standford was nice enough to stay for Christmas instead of driving home, in a blizzard

The boss was nice enough to let her do the operation with help

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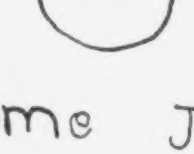
Appendix BB
Story Book Organizer

For Breakfast

By Carizma

some orange juice,

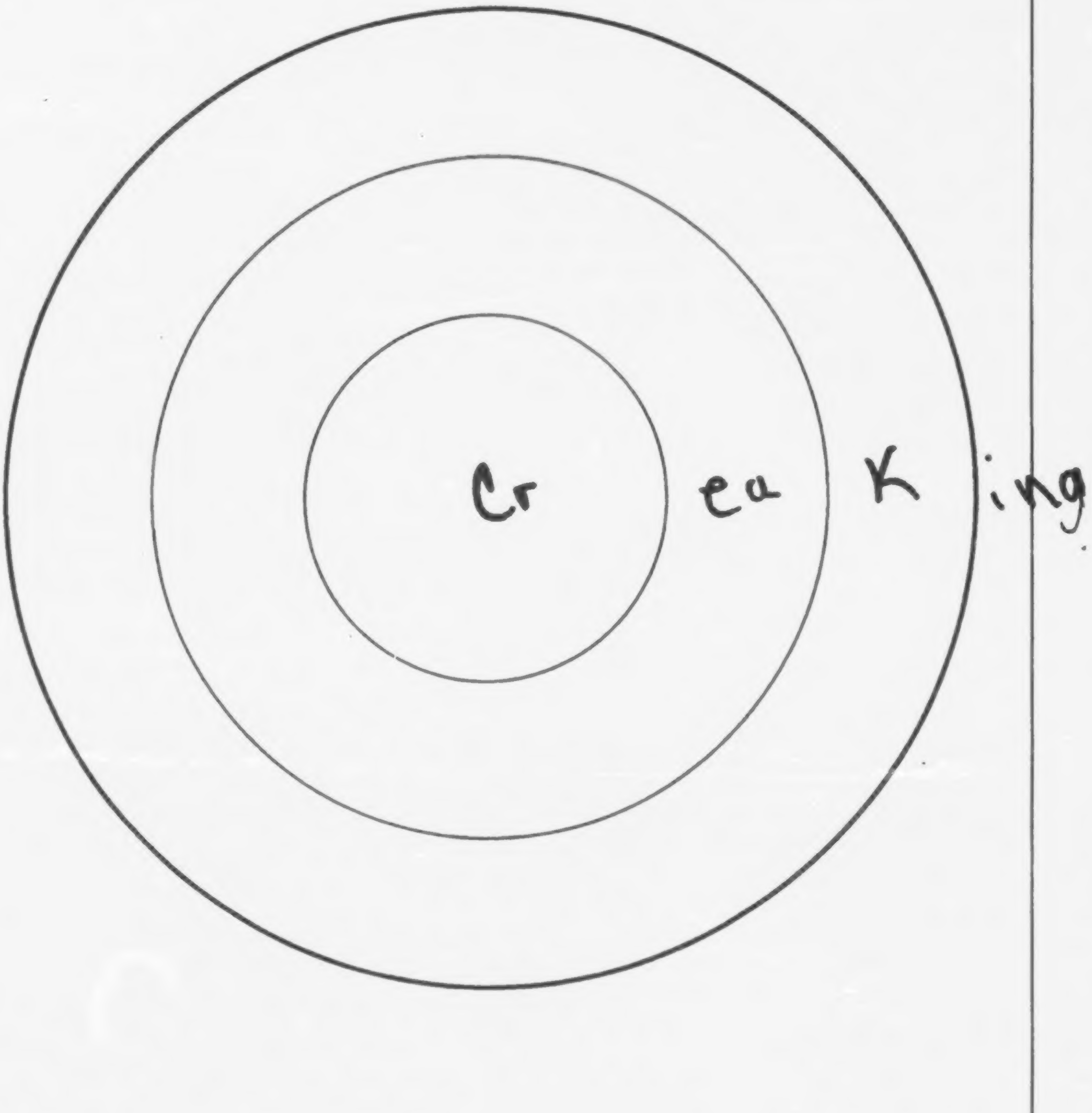


some Jam,

Appendix CC
The Target

NAME [illegible] CLASS ______

THE TARGET



I'm having a swim party at my Granny's house.

Our house had a mouse.

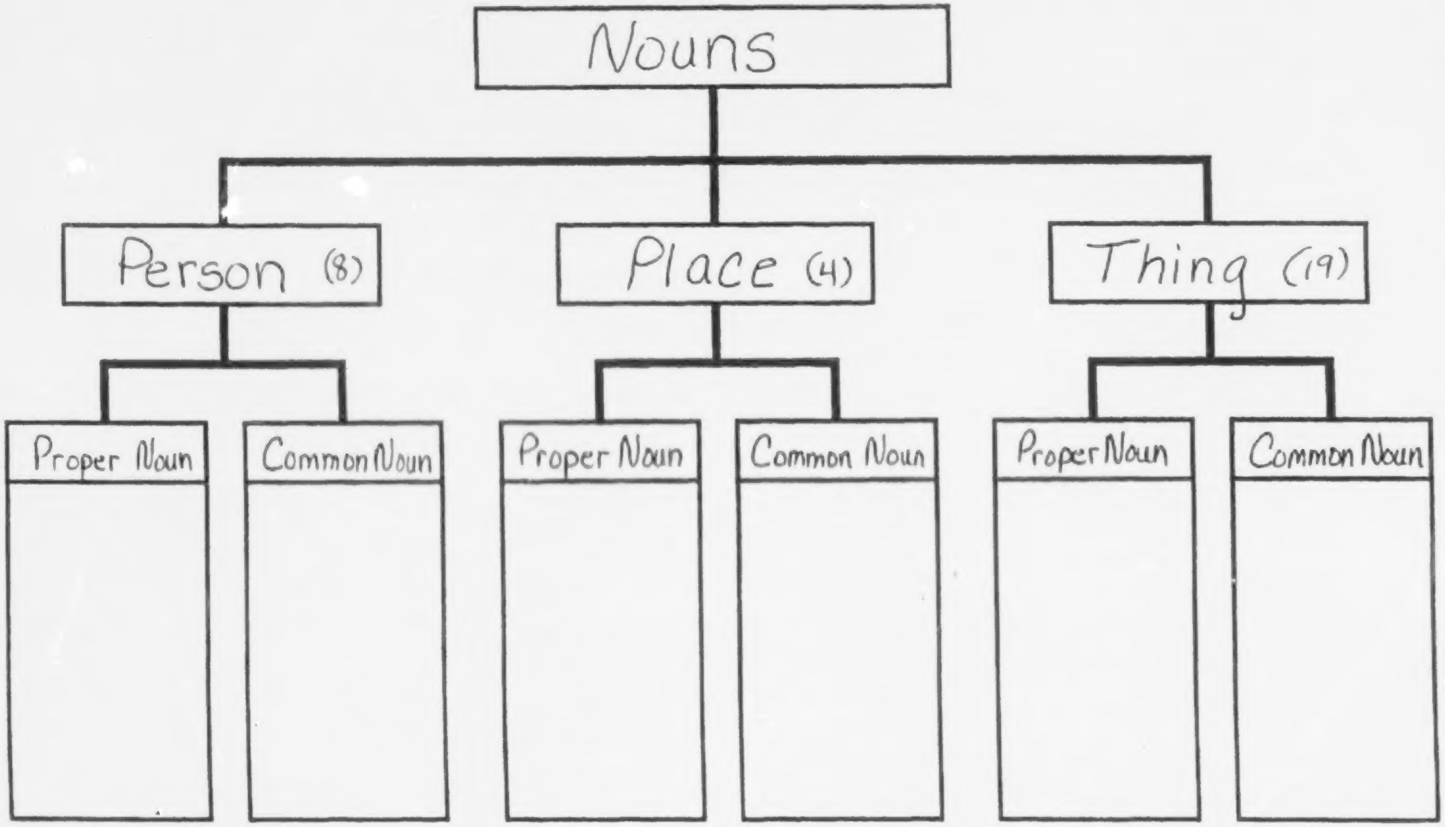
"Eeek!" cried my mom.

139

140

P89 (14-22) Name-

BRANCHING DIAGRAM–THREE CLASSES


Nouns
Person (8)
Place (4)
Thing (19)
Proper Noun
Common Noun
Proper Noun
Common Noun
Proper Noun
Common Noun

Appendix EE
Branching Diagram

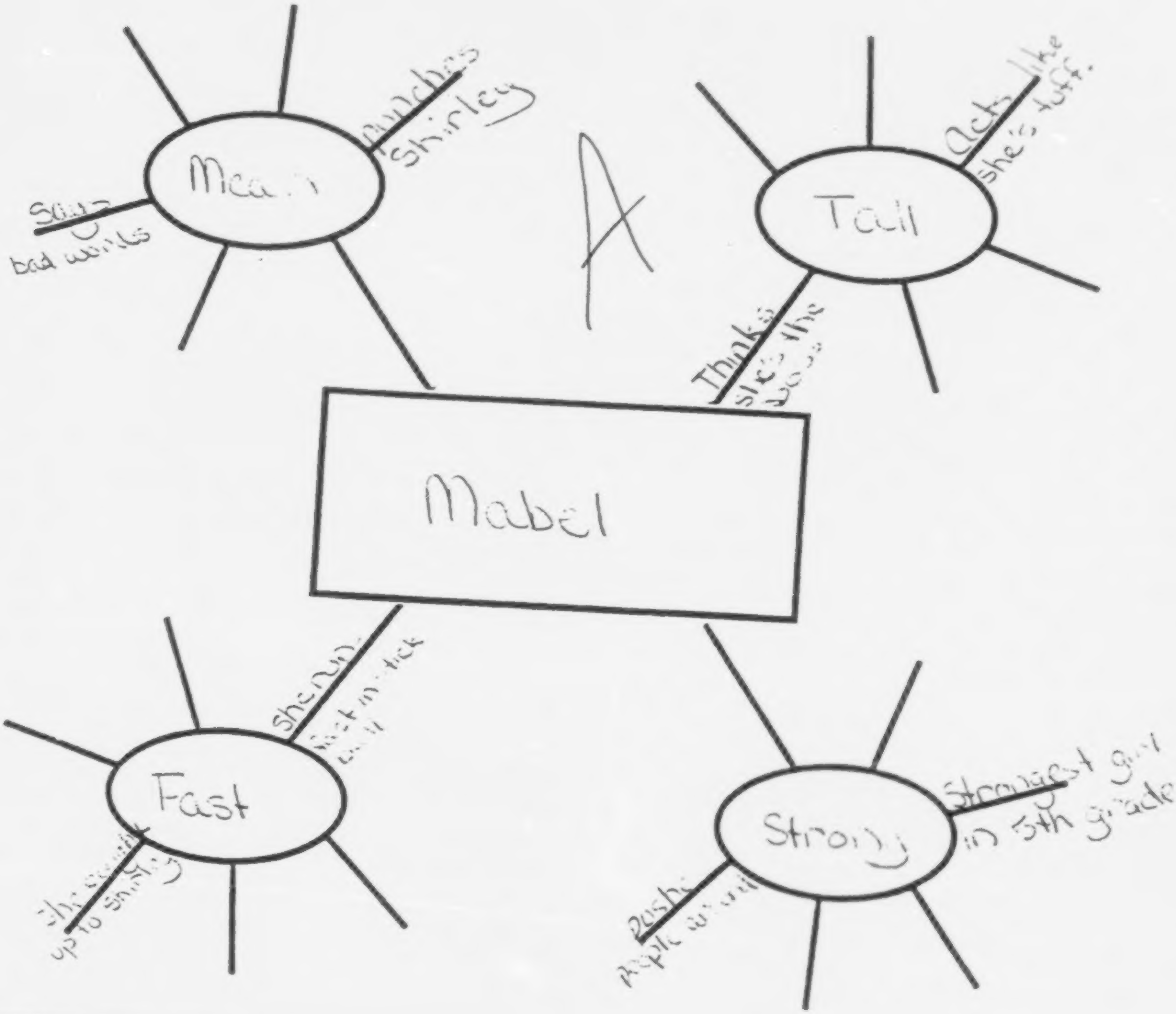
Appendix FF
Character Map

Character Map
(Pattern)

Maggie, [illegible], Nicole, Jayme

Book: In The Year Of The Boar And Jackie Robinson

Author: Bette Bao Lord


Mean
Says bad words
punches Shirley
A
Tall
Acts like she's tuff.
Thinks she's the boss
Mabel
Fast
she runs fast in kick ball
she stands up to Shirley
Strong
Strongest girl in 5th grade
pushes people around

▭ — character's name ◯ — qualities of character ▬ — examples of qualities

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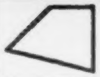
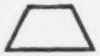
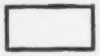
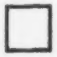
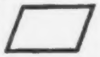
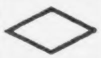
DESCRIBING QUADRILATERALS

DIRECTIONS: Put a check mark in the box of every geometry term that applies to each quadrilateral (four-sided shape).

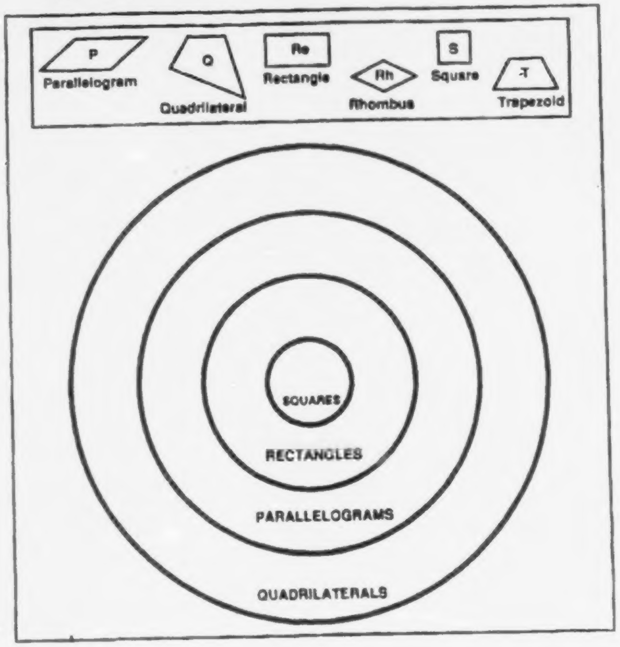
DEFINITIONS:
Parallelogram—a closed, four-sided shape with two sets of parallel sides.
Quadrilateral—any closed, four-sided shape.
Rectangle—a parallelogram with four right angles.
Rhombus—a parallelogram with four equal sides.
Square—a rectangle with four equal sides.
Trapezoid—a quadrilateral with only one pair of parallel sides.

	PARALLELOGRAM	QUADRILATERAL	RECTANGLE	RHOMBUS	SQUARE	TRAPEZOID
						
						
						
						
						
						

DESCRIBING QUADRILATERALS

DIRECTIONS: Draw each shape in the ring of the diagram which best describes it.

DEFINITIONS:
Parallelogram—a closed, four-sided shape with two sets of parallel sides.
Quadrilateral—any closed, four-sided shape.
Rectangle—a parallelogram with four right angles.
Rhombus—a parallelogram with four equal sides.
Square—a rectangle with four equal sides.
Trapezoid—a quadrilateral with only one pair of parallel sides.


P
Parallelogram
Q
Quadrilateral
Re
Rectangle
Rh
Rhombus
S
Square
T
Trapezoid
SQUARES
RECTANGLES
PARALLELOGRAMS
QUADRILATERALS

Appendix GG
Matrix/Target

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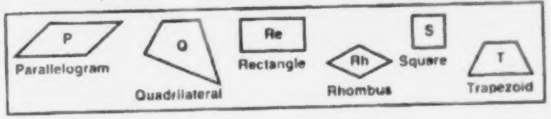
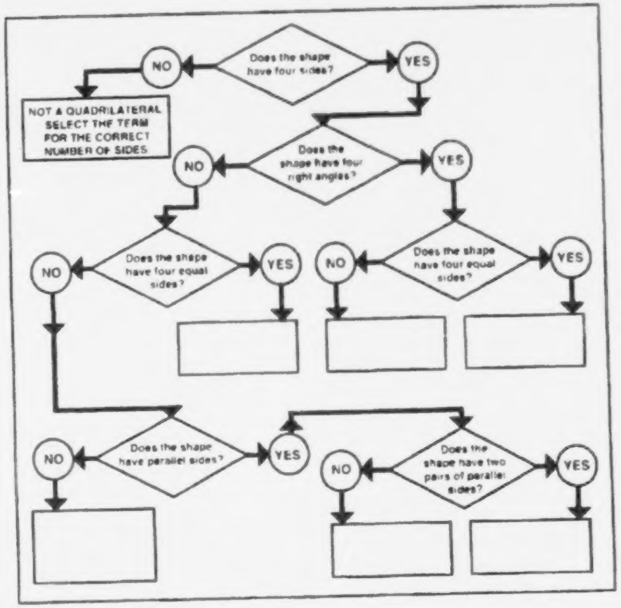
Appendix HH
Flowchart/Branching

CLASSIFYING QUADRILATERALS BY SIDES

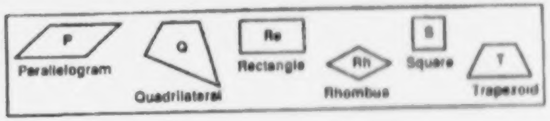
DIRECTIONS: Use the flowchart to name quadrilaterals by describing right angles, parallel sides, or equal sides. From the box below, select the shape which matches the answer to the question in each diamond. Draw and label the correct shape in each blank box.

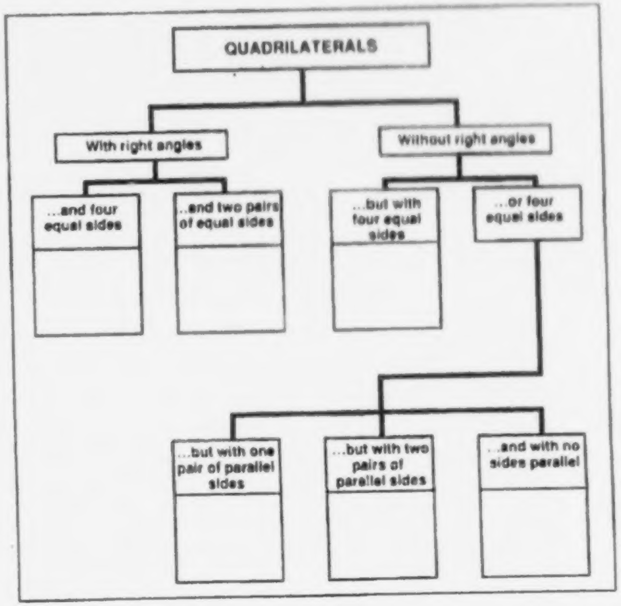

P
Parallelogram
Q
Quadrilateral
Re
Rectangle
Rh
Rhombus
S
Square
T
Trapezoid


Does the shape have four sides?
NO
YES
NOT A QUADRILATERAL SELECT THE TERM FOR THE CORRECT NUMBER OF SIDES
Does the shape have four right angles?
NO
YES
Does the shape have four equal sides?
NO
YES
Does the shape have four equal sides?
NO
YES
Does the shape have parallel sides?
NO
YES
Does the shape have two pairs of parallel sides?
NO
YES

CLASSIFYING QUADRILATERALS BY ANGLES

DIRECTIONS: Use the branching diagram to name quadrilaterals described by right angles, parallel sides, or equal sides. Select the shape that fits the description in each box. Draw and label the correct shape in each blank box.


P
Parallelogram
Q
Quadrilateral
Re
Rectangle
Rh
Rhombus
S
Square
T
Trapezoid


QUADRILATERALS
With right angles
Without right angles
...and four equal sides
...and two pairs of equal sides
...but with four equal sides
...or four equal sides
...but with one pair of parallel sides
...but with two pairs of parallel sides
...and with no sides parallel

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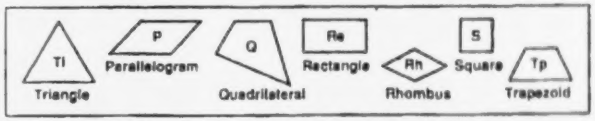
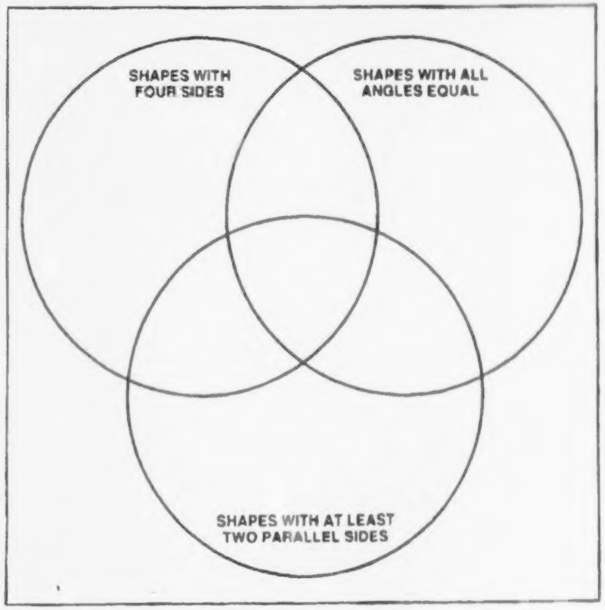
Appendix II
Class Relationship

CLASSIFYING SHAPES–EQUAL ANGLES

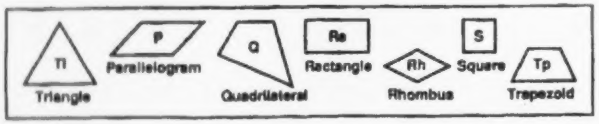
DIRECTIONS: Use the class relationships diagram to identify terms which describe shapes by number of sides, size of angles, or parallel sides. Draw and label each shape from the box below in the region of the graph which best describes it.

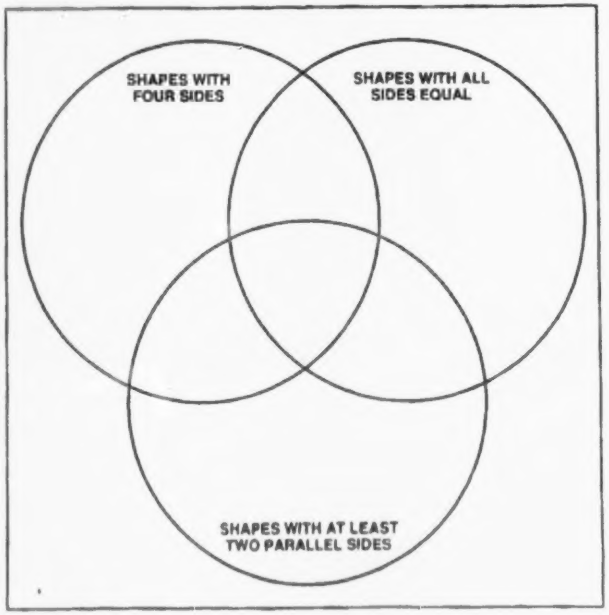

Tl
Triangle
P
Parallelogram
Q
Quadrilateral
Re
Rectangle
Rh
Rhombus
S
Square
Tp
Trapezoid


SHAPES WITH FOUR SIDES
SHAPES WITH ALL ANGLES EQUAL
SHAPES WITH AT LEAST TWO PARALLEL SIDES

CLASSIFYING SHAPES–EQUAL SIDES

DIRECTIONS: Use the class relationships graph to identify terms which describe shapes by equal sides or parallel sides. Draw and label each shape in the region of the graph which best describes it.


Tl
Triangle
P
Parallelogram
Q
Quadrilateral
Re
Rectangle
Rh
Rhombus
S
Square
Tp
Trapezoid


SHAPES WITH FOUR SIDES
SHAPES WITH ALL SIDES EQUAL
SHAPES WITH AT LEAST TWO PARALLEL SIDES

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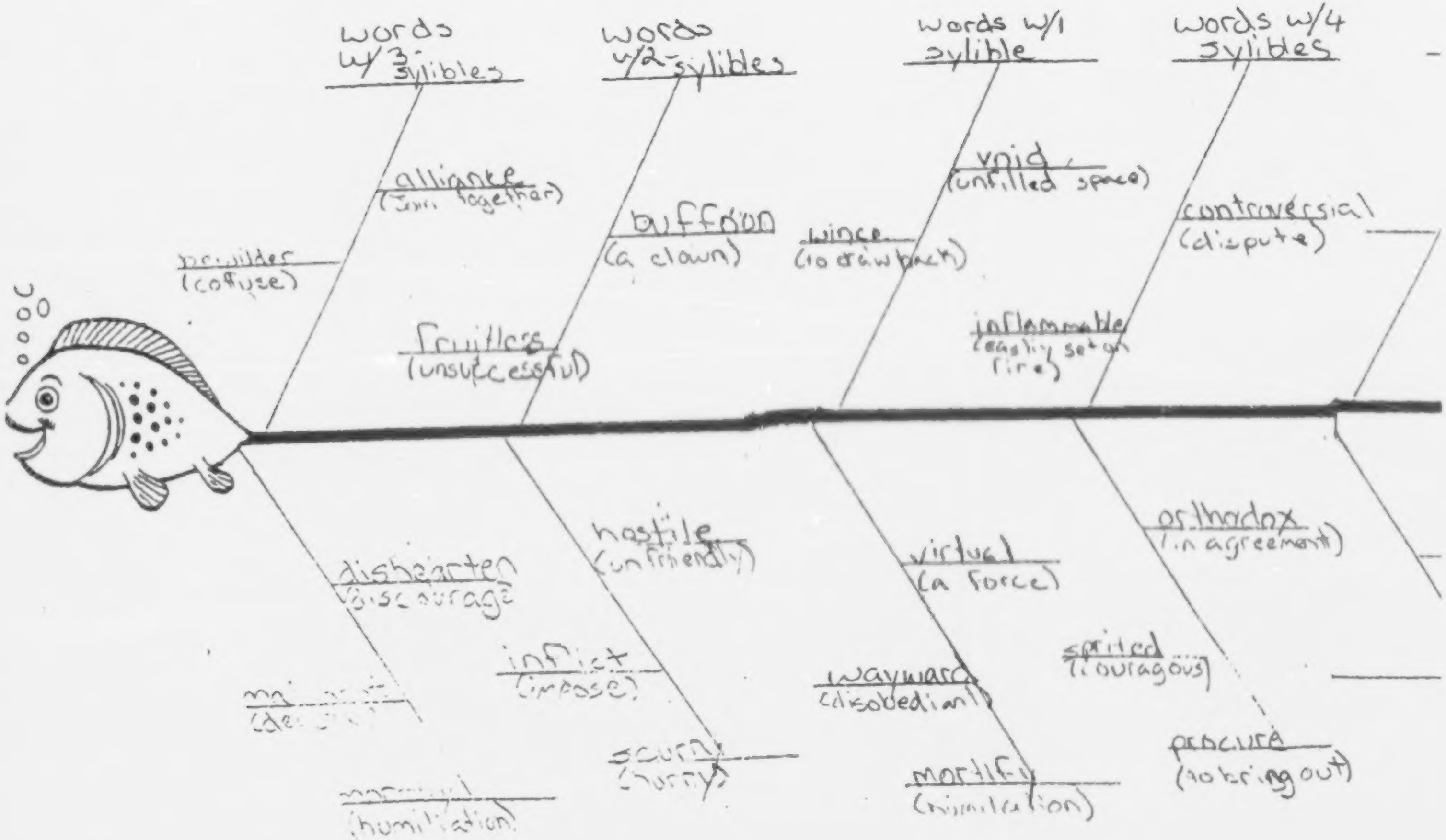
Appendix JJ
The Fishbone

Vocab 4 words



words w/3 sylibles
words w/2 sylibles
words w/1 sylible
words w/4 sylibles
alliance (join together)
bewilder (confuse)
fruitless (unsuccessful)
buffoon (a clown)
wince (to draw back)
void (unfilled space)
inflammable (easily set on fire)
controversial (dispute)
dishearten (discourage)
hostile (unfriendly)
inflict (impose)
scurry (hurry)
virtual (a force)
wayward (disobedient)
mortify (humiliation)
orthodox (in agreement)
spirited (couragous)
procure (to bring out)
(humiliation)

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INVESTIGATION I p. E7

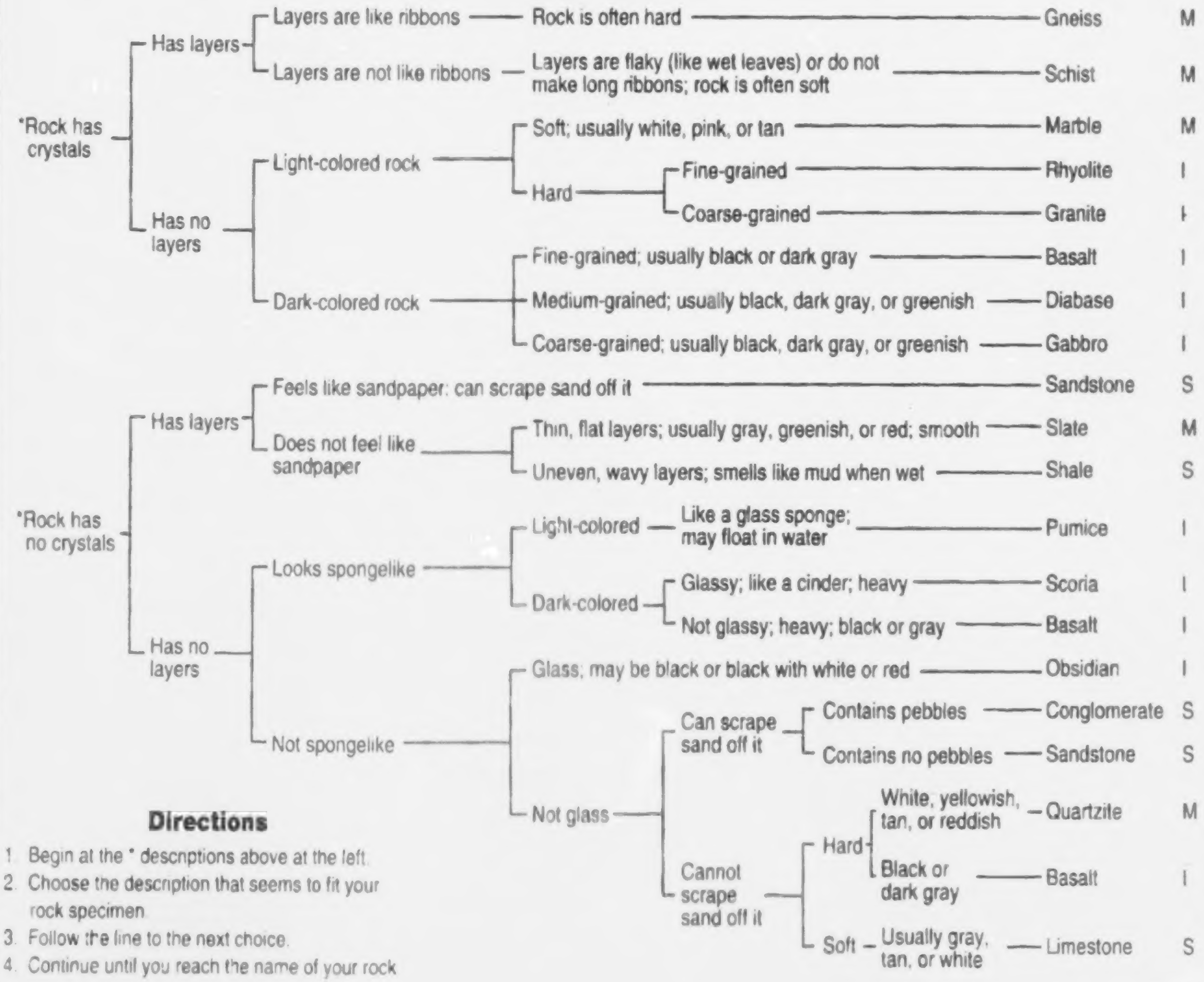
NAME______________________

MINERAL PROPERTIES CHART

	Mineral Number	Luster	Color	Streak	Hardness	Cleavage	Special	Name
		metallic	black	black	glass	no	magnetic	magnetite
		non-metallic	reddish	white	glass	yes	brittle	albite
		non-metallic	pink-gray	white	nail	yes	crystal faces	dolomite
		non-metallic	white	white	glass	yes	used in ceramics	orthoclase
		non-metallic	brownish-red	yellowish-brown	fingernail	no	rusty	limonite
		non-metallic	yellowish	white	copper	yes	brittle	calcite
		non-metallic	purple	white	nail	yes	brittle	fluorite
		non-metallic	brownish-red	yellowish-brown	fingernail	yes	brittle	rutile
		non-metallic	colorless	white	glass	no	brittle	rock crystal
		non-metallic	reddish	red to reddish brown	fingernail	no	brittle	hematite

Appendix KK
Matrix

THE ROCK KEY


*Rock has crystals
Has layers
Layers are like ribbons
Rock is often hard
Gneiss M
Layers are not like ribbons
Layers are flaky (like wet leaves) or do not make long ribbons; rock is often soft
Schist M
Has no layers
Light-colored rock
Soft; usually white, pink, or tan
Marble M
Hard
Fine-grained
Rhyolite I
Coarse-grained
Granite I
Dark-colored rock
Fine-grained; usually black or dark gray
Basalt I
Medium-grained; usually black, dark gray, or greenish
Diabase I
Coarse-grained; usually black, dark gray, or greenish
Gabbro I
*Rock has no crystals
Has layers
Feels like sandpaper; can scrape sand off it
Sandstone S
Does not feel like sandpaper
Thin, flat layers; usually gray, greenish, or red; smooth
Slate M
Uneven, wavy layers; smells like mud when wet
Shale S
Has no layers
Looks spongelike
Light-colored
Like a glass sponge; may float in water
Pumice I
Dark-colored
Glassy; like a cinder; heavy
Scoria I
Not glassy; heavy; black or gray
Basalt I
Not spongelike
Glass; may be black or black with white or red
Obsidian I
Not glass
Can scrape sand off it
Contains pebbles
Conglomerate S
Contains no pebbles
Sandstone S
Cannot scrape sand off it
Hard
White, yellowish, tan, or reddish
Quartzite M
Black or dark gray
Basalt I
Soft
Usually gray, tan, or white
Limestone S

Directions

1. Begin at the * descriptions above at the left.
2. Choose the description that seems to fit your rock specimen.
3. Follow the line to the next choice.
4. Continue until you reach the name of your rock.

ROCK KEY

Name ____________ Date ____________

Appendix LL
Flowchart

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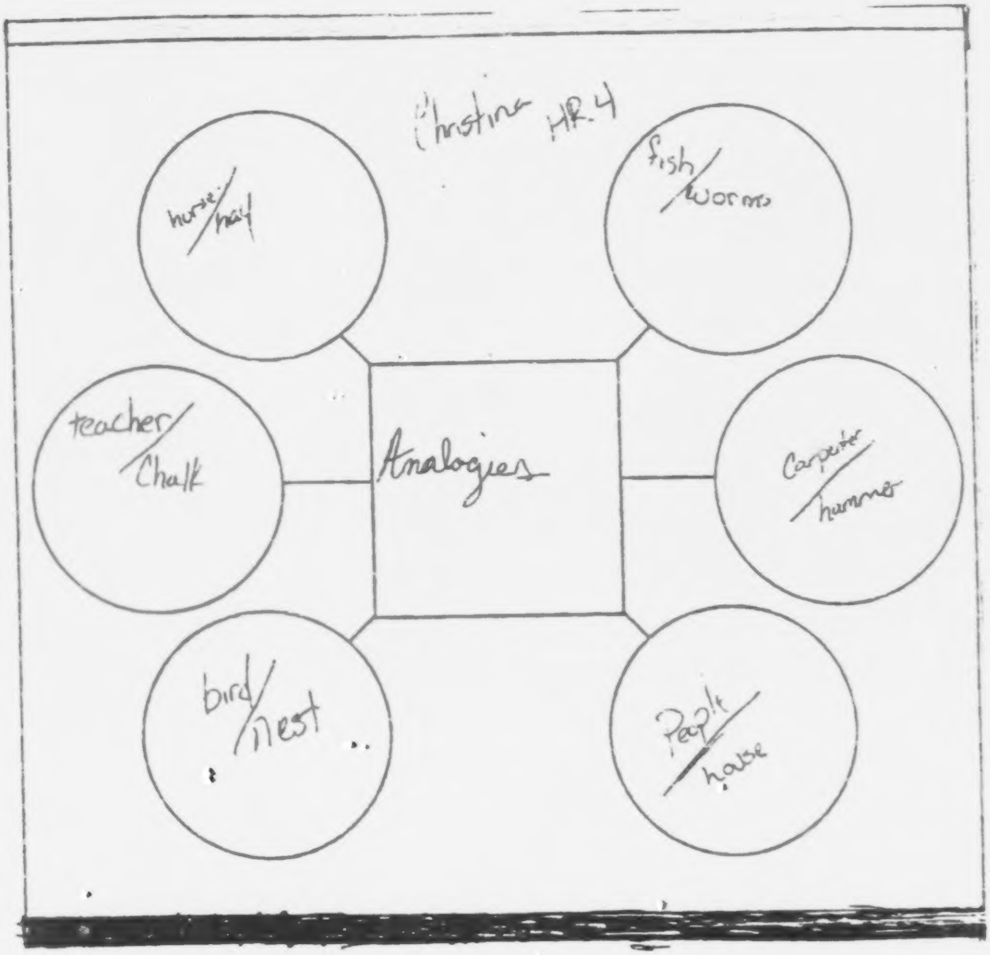
Appendix MM
Flowchart/Web

Characteristic	Part Of	Occupation	Purpose	Type of
fuzzy	wheel	mechanic	hammer	Checkers
frisky	Car	[illegible]	pound	[illegible]


Christine HR.4
horse/hay
fish/worms
teacher/Chalk
Analogies
Carpenter/hammer
bird/nest
People/house

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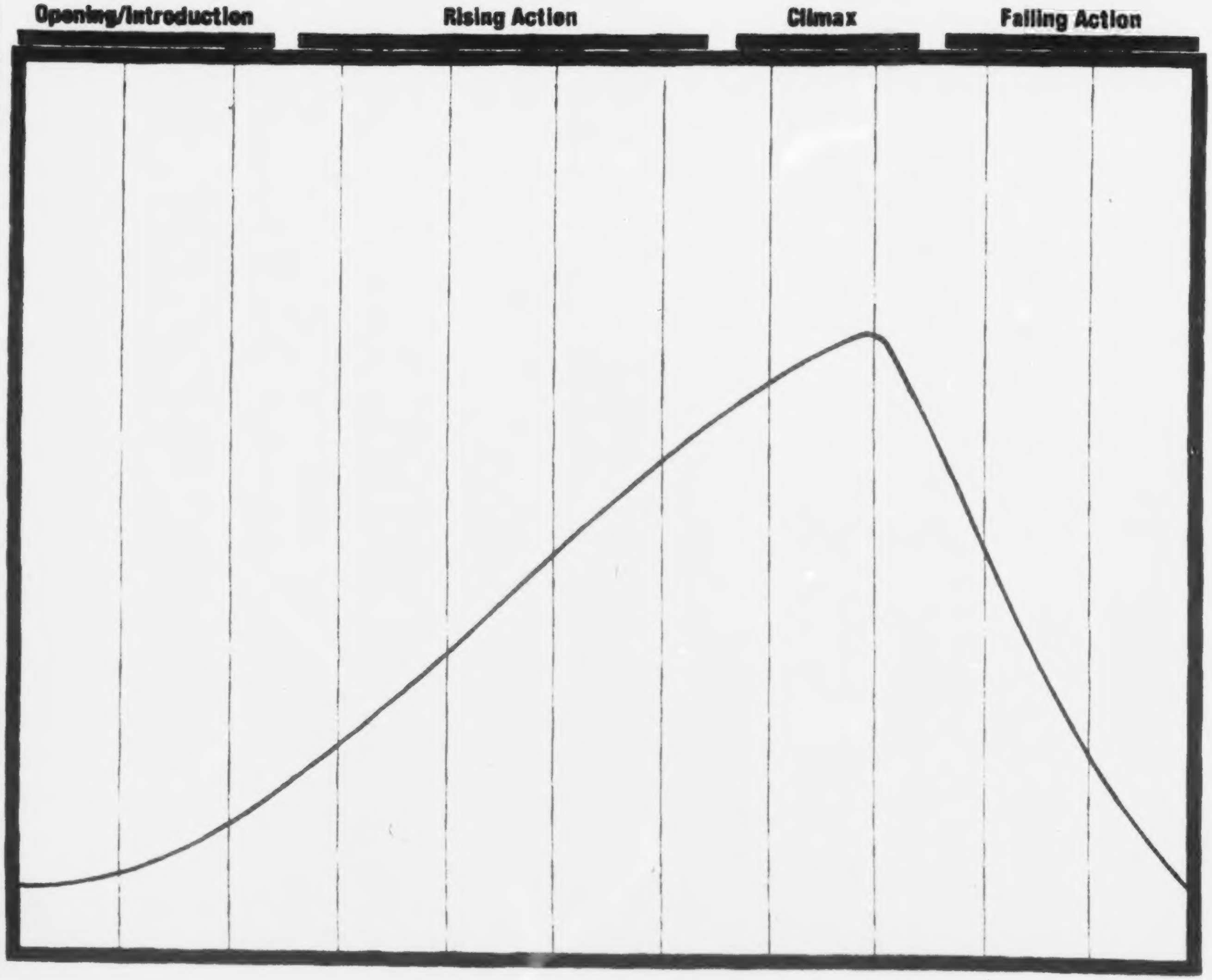
Appendix NN
Timeline

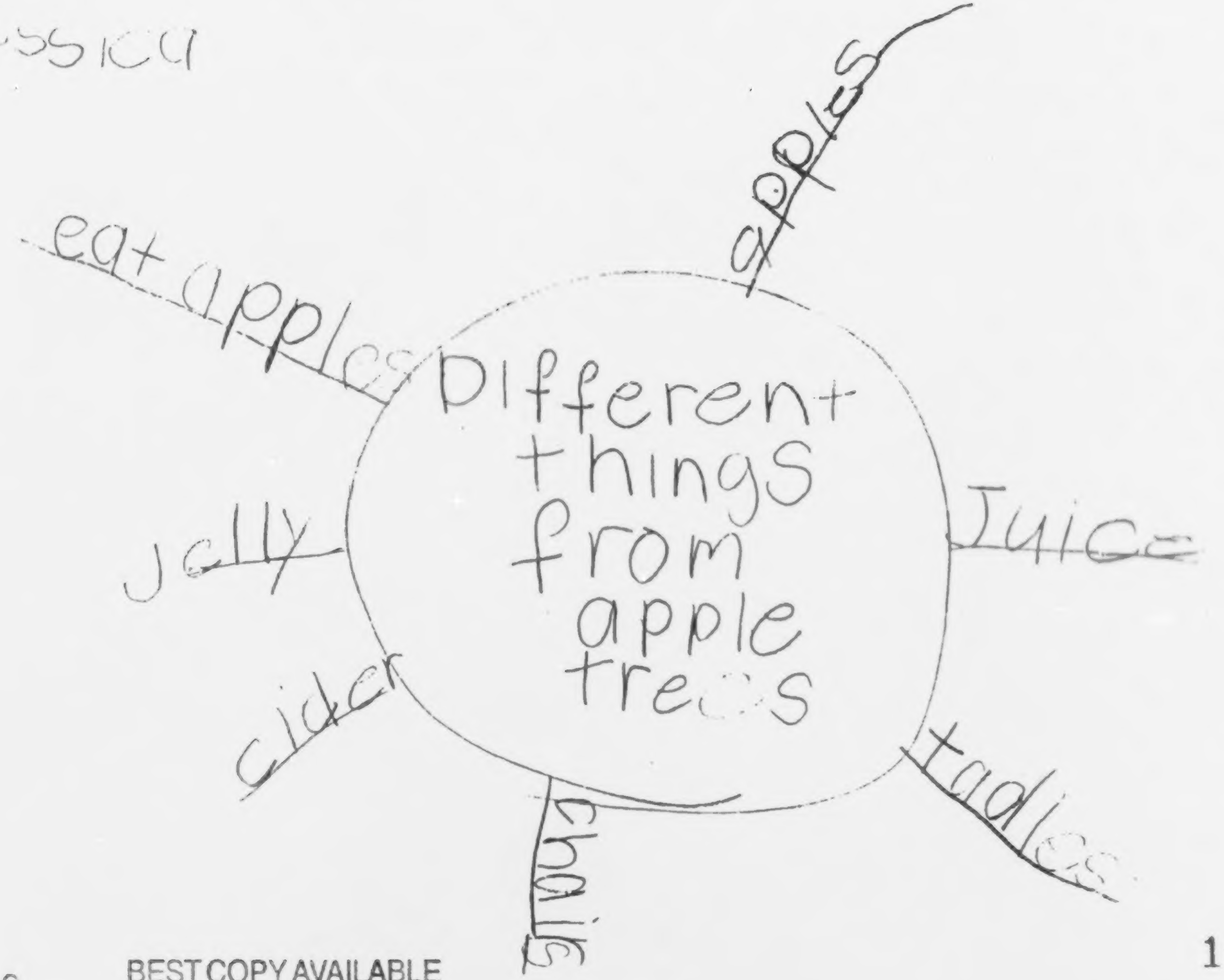
Sequencing an Incident

Class Worksheet 6


Opening/Introduction
Rising Action
Climax
Falling Action

Appendix OO
Web

ssica


Different things from apple trees
apples
eat apples
Juice
jelly
cider
chairs
tables

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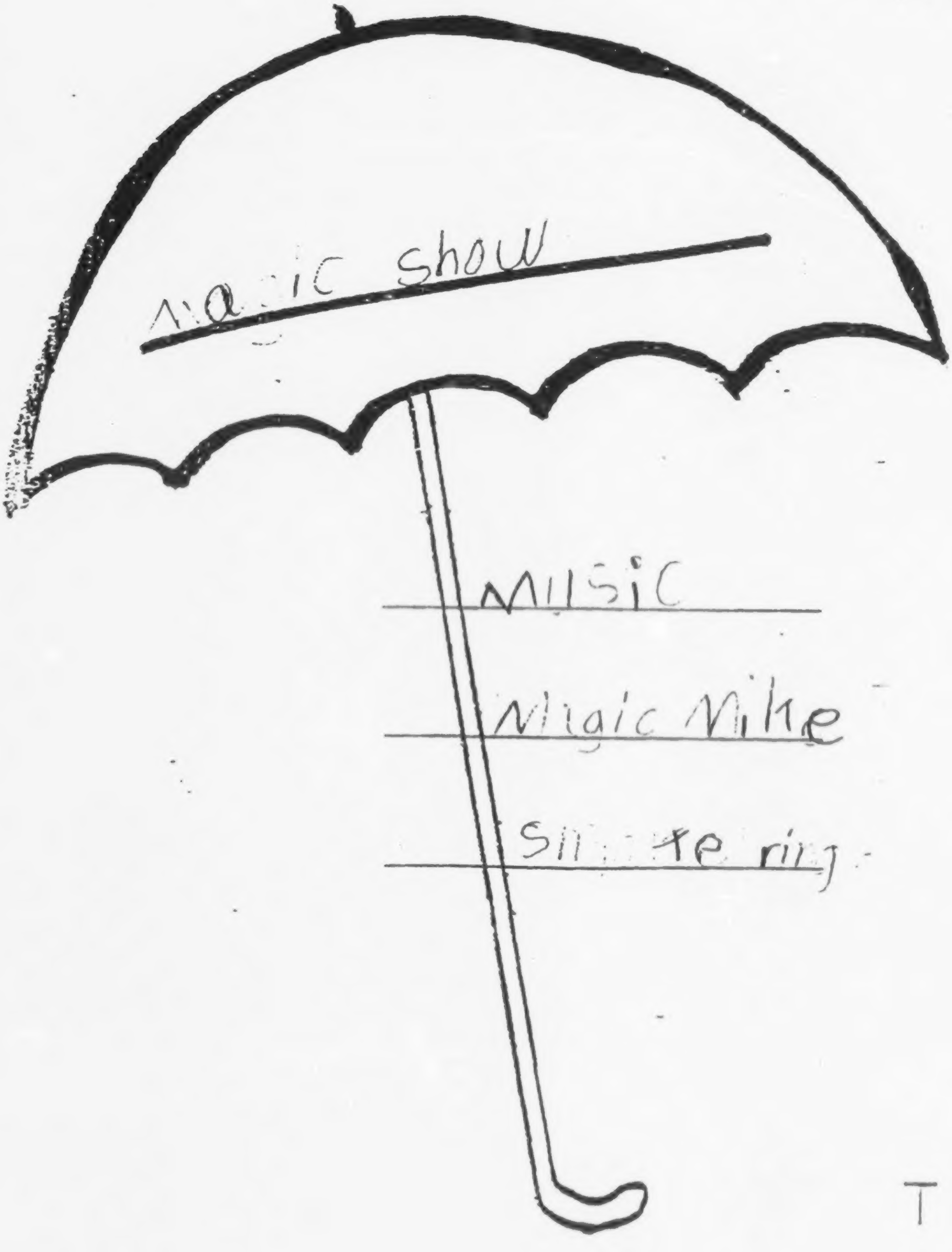
Appendix PP
Umbrella Diagram

KAY



Magic show

Music

Magic Mike

Smoke ring

T

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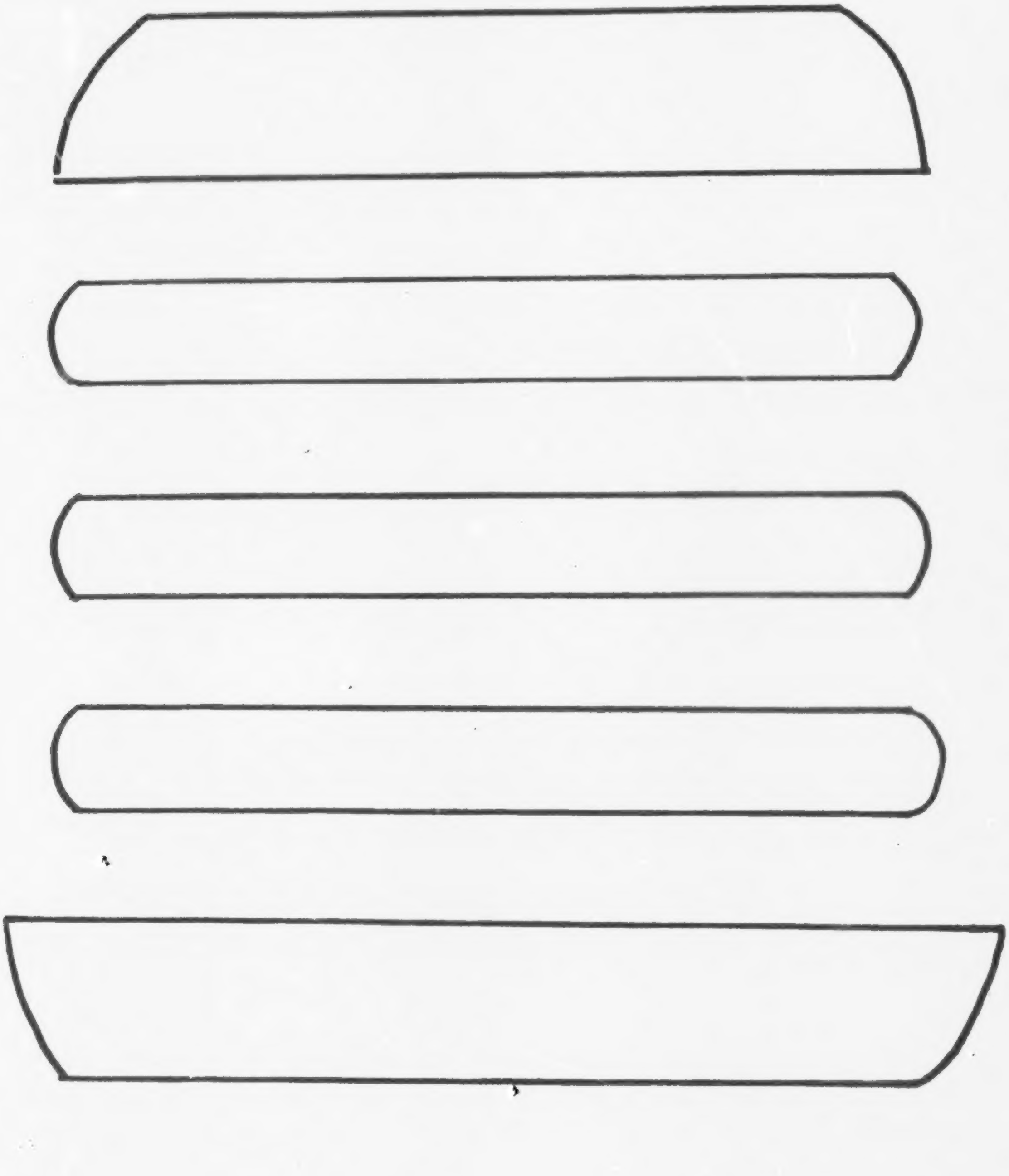
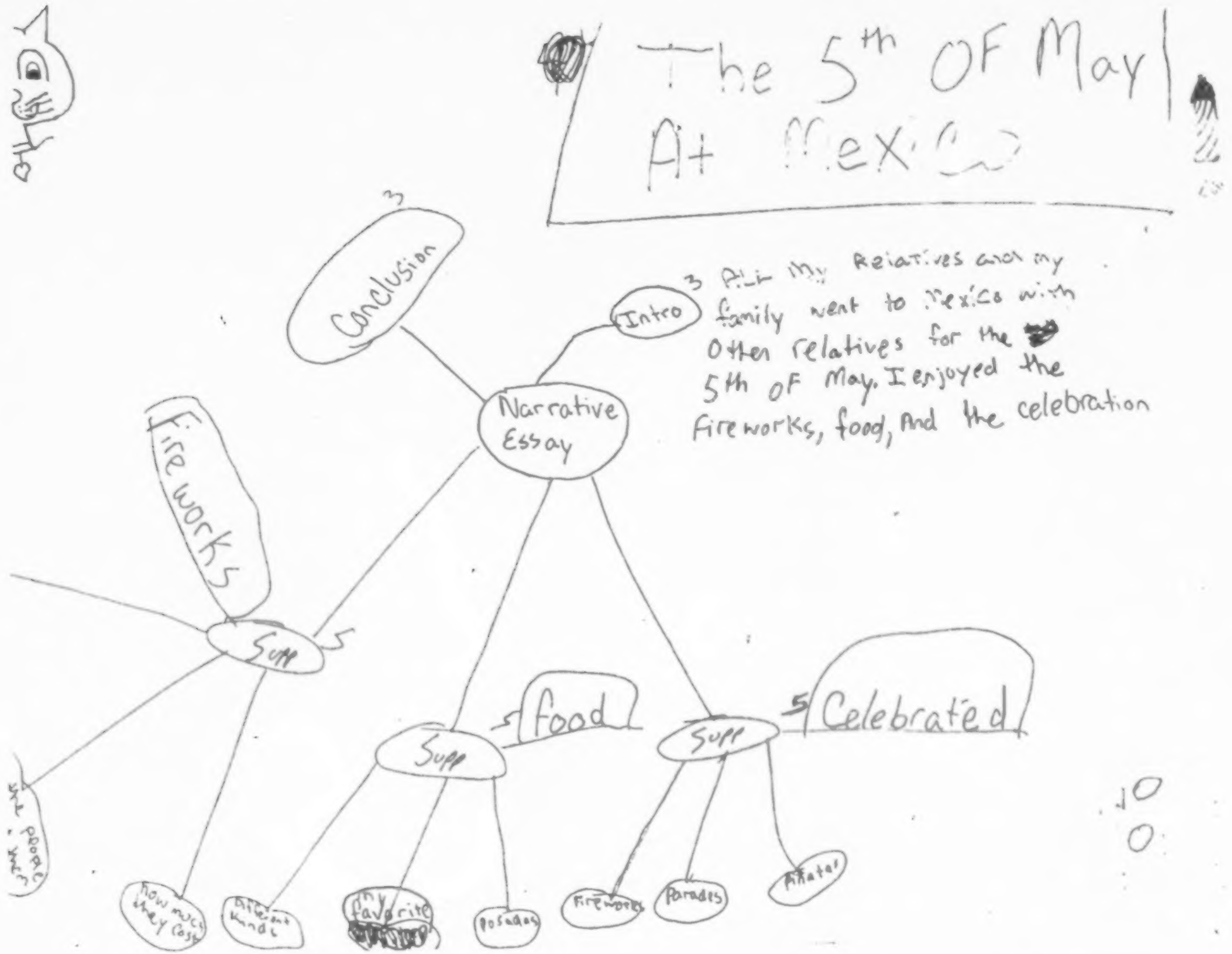
Appendix QQ
Cheeseburger

Name: ____________________ **Essay:** ____________________



Appendix RR
Mind Map


The 5th OF May
At Mexico
m
4
3
Conclusion
Intro
Narrative Essay
Fireworks
Supp
5
Supp
5
Food
Supp
5
Celebrated
people
how much they cost
Different kinds
my favorite
posadas
Fireworks
Parades
Piñatas

3 All my Relatives and my family went to Mexico with Other relatives for the 5th OF May. I enjoyed the Fireworks, food, And the celebration

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Appendix SS
Descriptive Paragraph

Mike K.

Word Portrait of an Animal I Love

"Nobody else loves you as much as a dog. Except your ma, maybe."
—Marty Preston

We can all relate to Marty when he falls in love with Shiloh. Most of us have, at one time or another, loved an animal dearly. Use this page to describe an animal you love. Use lots of detailed descriptions of the animal. What is its personality? When and where did you get it? What does it like to do? Attach a photo of your animal in the space provided. Feel free to use the back of this sheet if you need more space.

My favorite pet is my dog Moose. He is brown and black, he is part basset hound-part german shepard. He is a very strange looking dog, but still cute. He has a playful personality but he doesn't misbehave, much. He has short stubby legs, a long weiner-like dog body. We got 'em at the pound about 2 years ago. He was full grown and he had a name when we got him. He had a small mark on his side. He also has big floppy ears. He likes to run around and play

What a combination

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Appendix TT
Persuasive Essay

English
Essay
Jan. 14, 1999

Cheating is a very bad thing and can become a very bad habit. Cheating is copying a paper, moving extra spaces on a board game, and not dividing equally.

When I was in 1st grade there was a girl who copied a story written by me. I happened to see the girl's eyes on my paper. When the teacher saw it I almost got in trouble. There was a note on my paper to see the teacher and I told her the girl copied my paper. If someone runs out of ideas they don't have to cheat.

When I am playing a game sometimes I think the other person is cheating. In the game, my friend was farther than me and I went first. When she won at the end of the game, she bragged. I think she moved too many spaces, so she could win. Even if you want to win badly,

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you still shouldn't cheat.

One time I was splitting a piece of cake with one of the members of my family. I think she chose the bigger piece of the cake. Then she had a smile-smirk on her face. After that, she even admitted she chose the bigger piece. Even if you want the larger slice of something, you should say it's not divided equally.

Cheating is a horrible action. All cheaters should be punished.

Appendix UU
Expository Essay

A

1-2$^{(3)}_{5}$-99
Language
Essay

I was making the trip back from the remote wilderness in Canada, dropping off a hunting party. I was flying along without any problems, when all of the sudden... BOOM! I had just crashed the plane. It was very severe weather out there. The storm was very fierce and windy. Now I'm just lying here feeling nothing but pain. I feel horrible.

I decided I would walk-out and try to find some help. I started off not knowing where I was. I could barely see a lake when all of the sudden... OUCH! I had gotten stung by a bumble bee! Now I was feeling a ton of pain.

Next thing I knew, I was running to the lake. I needed to get cleaned off. Suddenly, I noticed something in the bush... it was an opossum! He started to chase me for what seemed like hours! He chased me all the way to the lake, and then walked away.

I got to the lake, and started

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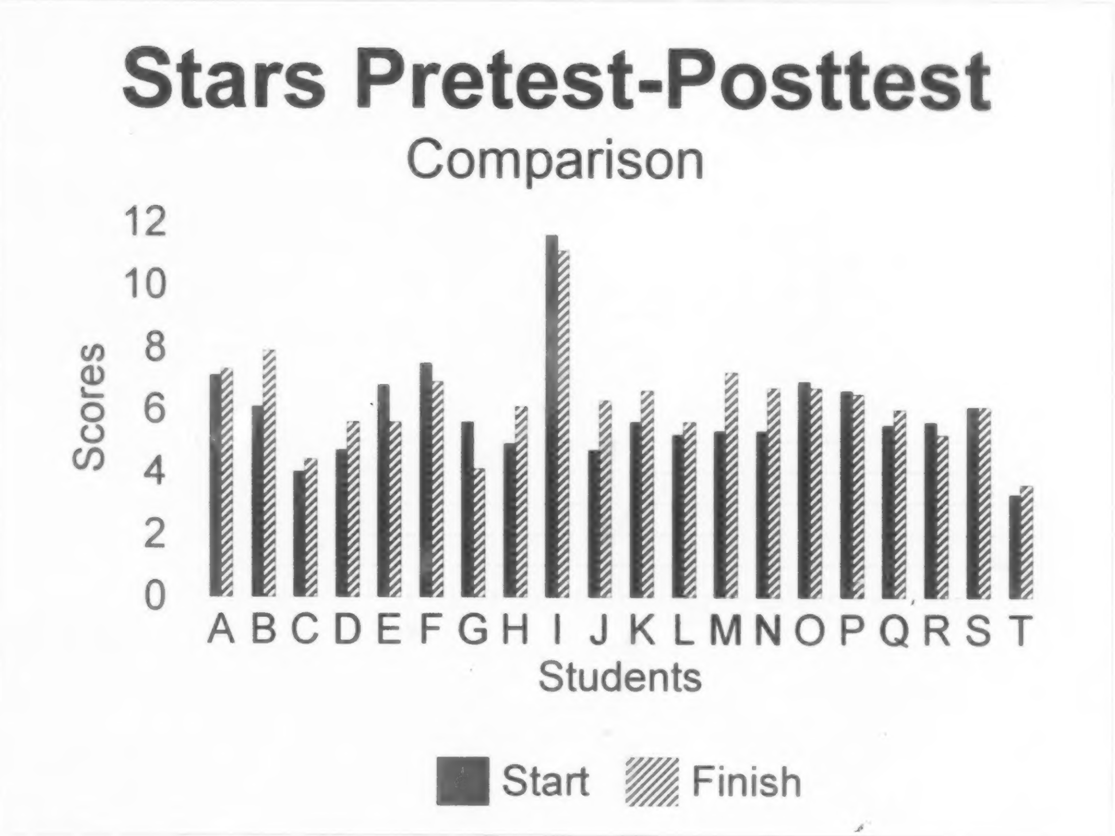
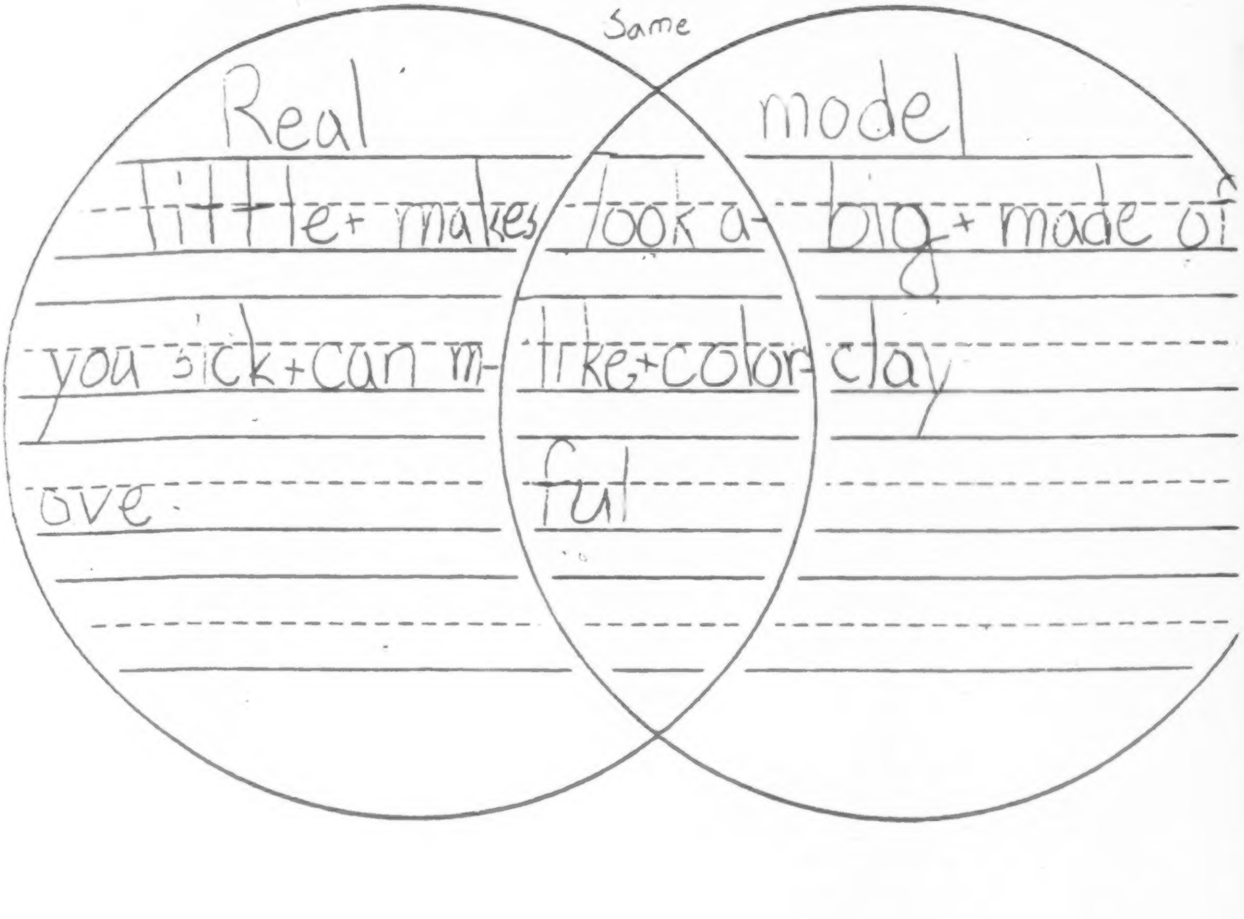
to wash my face, ________ when I got knocked in the water! Next thing I knew, I was getting chased by an alligator! I was screaming at the top of my lungs! I swam and I swam, until I lost him. He must have run out of breath. So, I got out of the water and I decided to walk for a while.

I noticed that ___ I was in a little town I asked around for some help. Somebody finally told me I was just about one town away from my house. Someone told me where the police station was so I went over there. Luckily the police officer offered to take me home. I was so relieved! It seemed that I was away from home forever!

Appendix VV
STAR's Test Results



Appendix WW
Venn Diagram



Same

Real

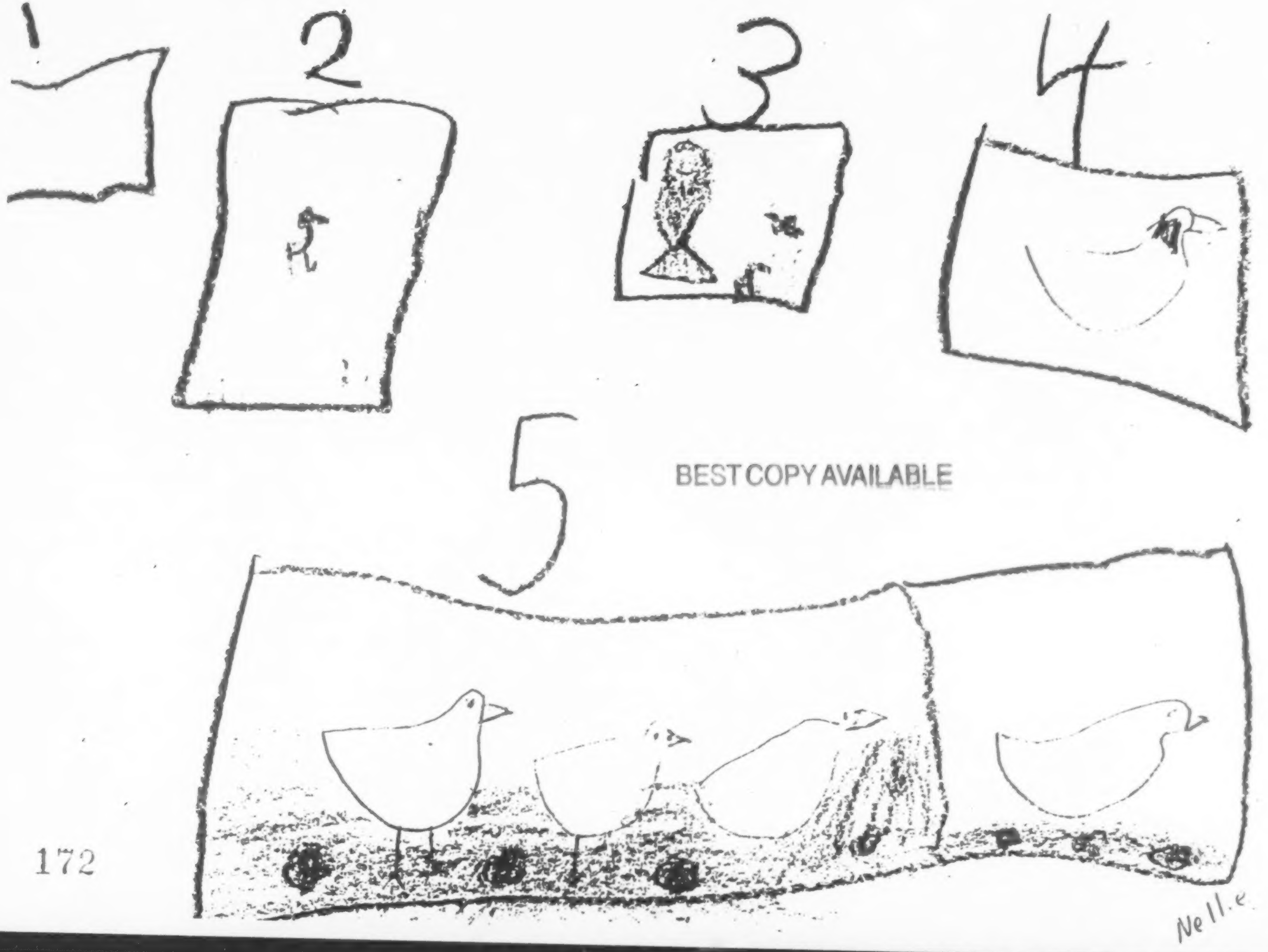
little+ makes
you sick+can m-
ove.

look a-
like,+color-
ful

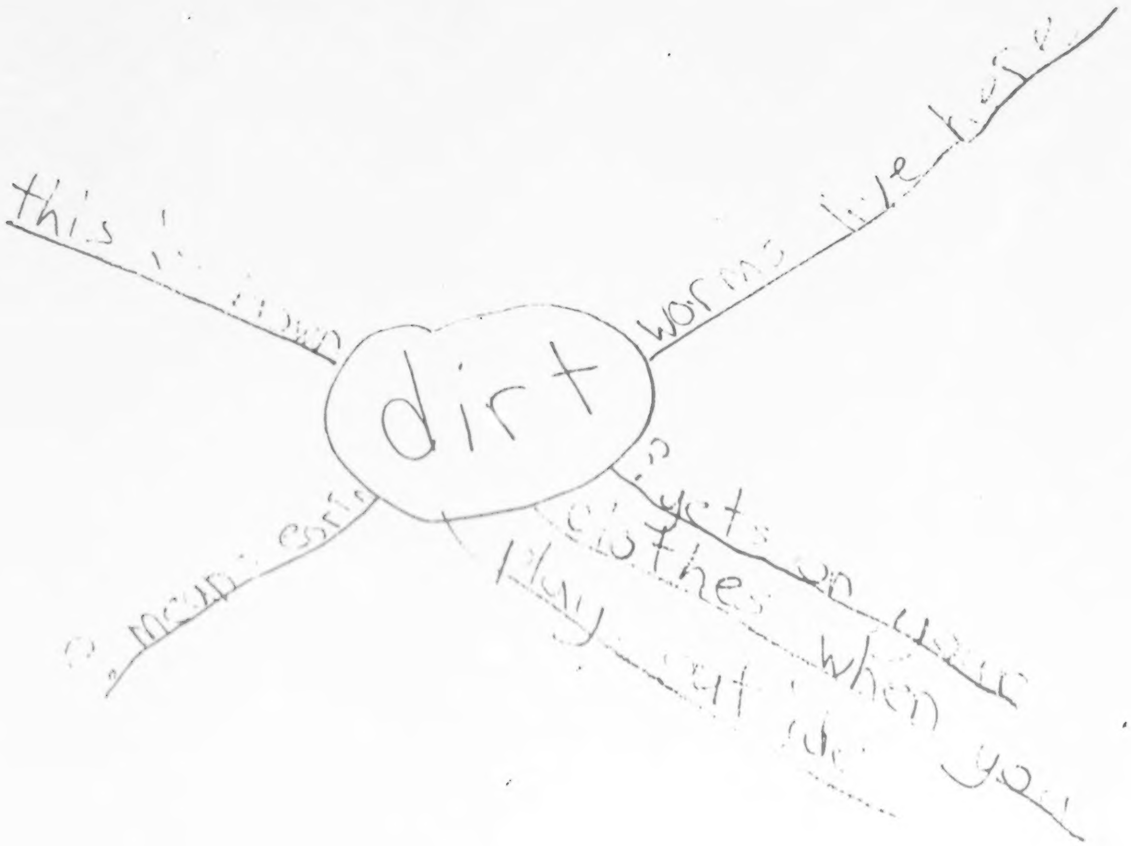
model

big+ made of
clay

Appendix XX
Sequence Chart


1
2
3
4
5
Nelle

BEST COPY AVAILABLE


dirt
this is brown
worms live here
a man eats
gets on your
clothes when you
play outside

Appendix YY
Web

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Korrie Brian Michael

Appendix ZZ
Writing Sample

Kayla

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Frog and toad.
went to play at the park

Appendix AAA
Writing Sample

Kayla

The magic show we went to in Rockford was fun. To begin with, I liked Magic Mike the best. After that, I like the music there. It was nice music. Most of all, I like the smoke ring. It went up to the ceiling. These are the reasons why the magic show was fun.

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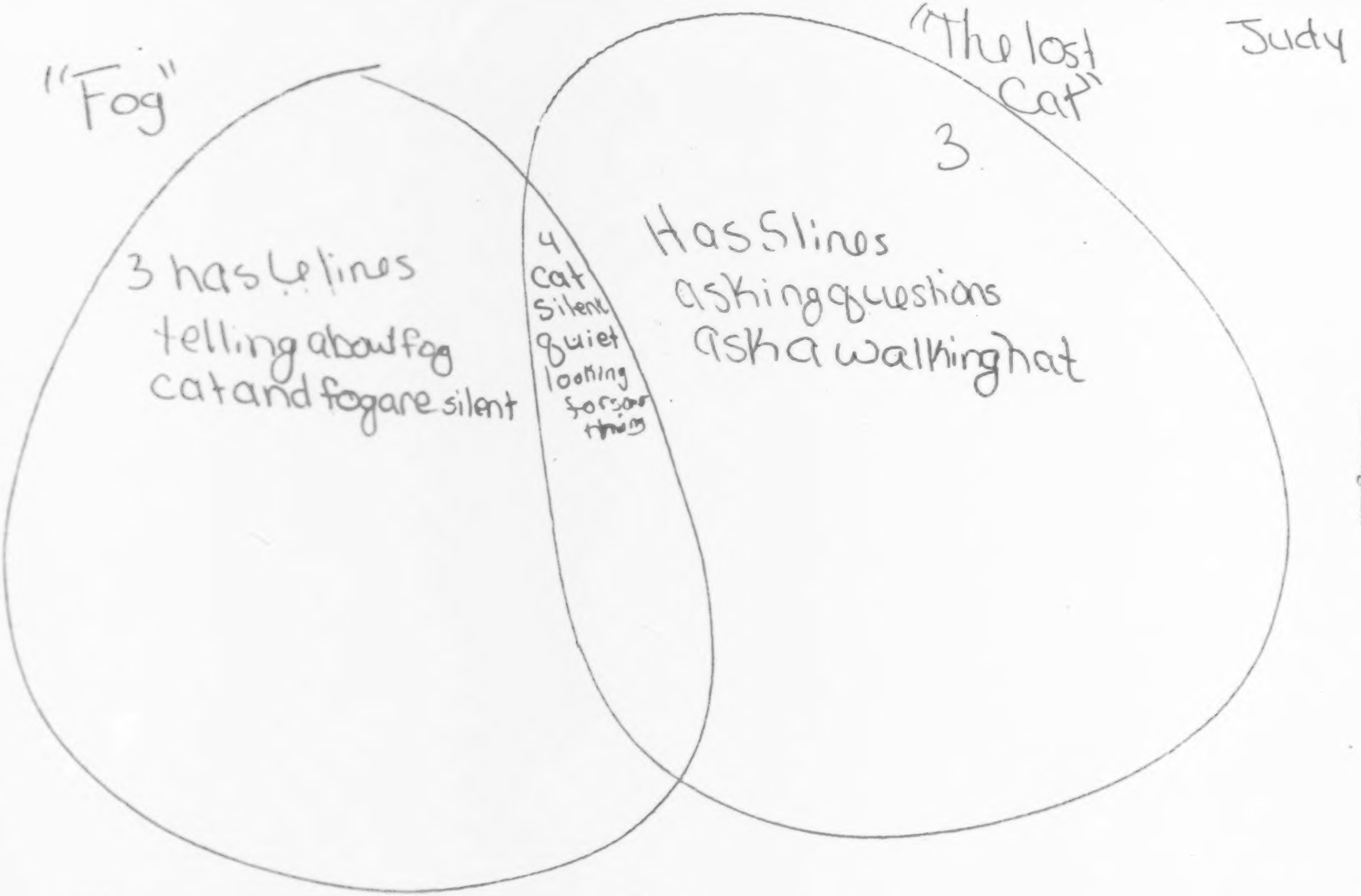
Appendix BBB
Venn Diagram


"Fog"
"The lost Cat"
Judy
3
3 has 6 lines
telling about fog
cat and fog are silent
4
cat
Silent
quiet
looking
forsom
thing
Has 5 lines
asking questions
ask a walking hat

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Appendix CCC
Writing Sample

70

Trafic Hour

Sep. 9, 98 - En
Date

There are

a City is a busy place. taxi cabs c and traffic jams, Then the guys yelling get your hot dogs any style, Then the skyscrapers and all the people who live and work in them, Then there's the musumes with big dinosaur bones, this is the city to me.

Your three middle sentences are fragments, not complete sentences.

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Appendix DDD
Writing Sample

MY FIRST DAY AT BJHS

My first day at school was fun but the hallways were crowed . I was surprised to find out my home room teacher is my next door neighbor . I didn't have time to go to my locker for three days . Then on Monday we got are books so I had to go to my locker . The first time opening it was easy but the second time I had a teacher help me.

My homeroom teacher Mrs. Koch is very nice I like her class . My first hour class is reading I have Miss Moral . I thought her class was really hard but after a week it wasn't as hard . My second hour class is math with Mrs. Repka her class has always been hard for me. My third hour class is P.E. which is my favorite class . My next class is yours I like your class because we barley ever have homework .

Lunch was very hard the first day because I had no friends to talk to . Then I forgot take my lunch so I had no one to talk to and no lunch the first day . Then I have shop, I have always liked shop but the first day we didn't do any thing we just went over the rule's . Then I had science which I didn't like because we were studying the metric system which I do not get . Then I have geography I don't like it because we always have homework .

Then I have music which is fun because we watch movie's and listen to tapes . We lernd how to read notes wich wasen't bad . But some people have a hard time reading notes . I'm doing good in all my classes I'm geting good grades to . I realy like your class and all my other classes .

So thats my first day at BJHS every teacher was very nice . All my classmate's were nice to me . I enjoyed my first day of school very much . The hallways weren't as bad after the first week . The homework isn't as bad now .

Appendix EEE
Writing Sample

MY SUMMER VACATION

For my Summer vacation I got a season pass to Magic Waters. I went several times with my sister and cousin, Tiffany. They went even more than that. I went on all the slides and tube rides. The bad part about Magic Waters is that I always get a bad wc sunburn that hurts for a long time. wc

I also got a lawn mowing job for the neighbor lady. I get $15.00 for mowing her lawn. Her lawn mower is old and orange. It is very loud and has no brakes. Her yard is very big, and it takes me about an hour to mow. Sometimes I do the trim and help her cut down old tree branches, too.

I found another lawn mowing job with the neighbor behind us. I do the trimming around the trees and bushes while he mows the lawn. I get $10.00 dollars for mowing this one. It only takes about 30 minutes to mow. Its harder because it is on a steep hill.

In August my family and I went to the Boone County Fair. I rode alot of rides. My family watched the Queen contest together. My mom and I ate alot of elephant ears. My cousin Tiffany, my sister Danielle, and I ate funnel cakes, cotton candy, and taffy apples. I went on the Zipper alot with my cousin.

So that was my summer vacation. I hope you liked it. I just can't wait until next summer. Especially ~~so~~ I can go to the fair again, and I will miss the money I make for mowing. I won't miss the sunburns, though.

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